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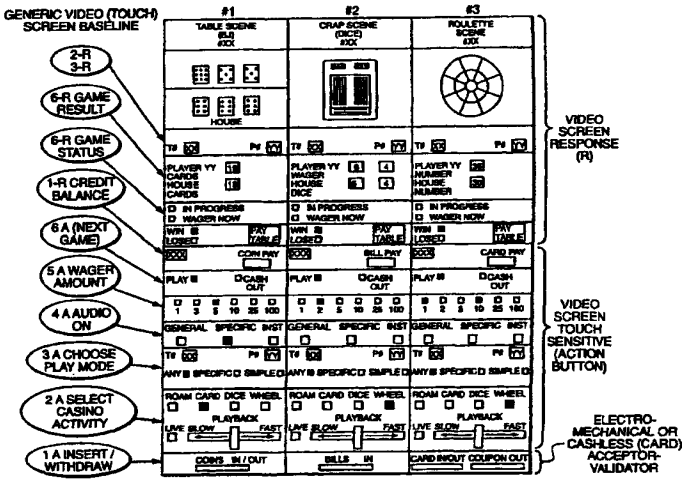
(54) Title: VIRTUAL DISTRIBUTED MULTIMEDIA REGULATED GAMING METHOD AND SYSTEM BASED ON ACTUAL CASINO GAMES



(57) Abstract: A virtual gaming experience is enabled by using randomly retrieved gaming episodes from a pre-recorded episode database. The pre-recorded videos are obtained from previously recorded casino security video or from closed regulated tournament video recordings or from computer generated animations. The casino based multimedia source provides audio-video signals depicting various legally-authorized live casino games. An accounting subsystem manages the compensation, credit accounts, and authentication for a virtual player. An electronic or mechanical database distribution center connects the multimedia video source and the player accounting subsystem to a virtual player station. The virtual player station includes an appropriately secured display for displaying to the virtual player the multimedia video signal depicting the legally-authorized live casino game or a pre-recorded legally randomized casino game or the artificially generated pre-recorded game. The virtual player station also provides appropriately secured gaming information, which enables the legally authenticated (biometric or otherwise) virtual player to place a game episode outcome wager. The virtual player station also provides gaming information to enable the virtual player to receive a payout. Novel simplified wagering rules also enable the virtual player to bet either for or against the actual player depicted in each of the pre-recorded gaming episodes using either a live casino multimedia video signal or a restricted randomized casino multimedia game video from a pre-recorded storage medium. Pay table related

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

decisions for the simplified wagering rules are as simple as video slot wagering compared to more complicated casino pay tables for card and other games, such as craps. A virtual player can concurrently play several dissimilar casino games with these simplified wagering rules at the same player gaming station. When selecting a game, the virtual player can virtually roam around a casino and then participate in a plurality of selected games and purchase casino sponsored E-commerce services and products without leaving the virtual player gaming station.

VIRTUAL DISTRIBUTED MULTIMEDIA REGULATED GAMING METHOD AND SYSTEM BASED ON ACTUAL CASINO GAMES

BACKGROUND OF THE INVENTION

1. Field of the Invention. This invention relates to virtual regulated casino-type gaming systems and business processes and, more particularly, to an improved casino on-site, regulated off-site and regulated Internet remote gaming experience.

2. Prior Art. A Hodges et al. U.S. Patent No. 4,446,424 discloses a remote gaming system for use with a wagering or gambling establishment such as a casino. A player participates in a selected one of a plurality of live wagering games from a remote location. The system includes a croupier station, a credit station, and a remotely located player station. The player station includes a live game display for displaying a selected one of a plurality of games being played at the croupier station, such as craps, roulette, or keno. The player station includes a separate, changeable playboard for displaying a selected one of a plurality of wagering possibilities corresponding to a selected one of the plurality of games being played and for displaying the results of the game being played at the croupier station. The player station also includes a microprocessor for controlling the operation of the live game display and the operation of the separate, changeable playboard. The betting decisions required by the remote player for the croupier games are just as complicated as the actual games and no card games are mentioned. The Hodges et al. system is not practical because state gaming laws also require that the eligibility of a remote player be initially established and also be periodically verified by security personnel. No mention is made in the Hodges et al. patent for any player authentication at the remotely located player station, such as a hotel room, or convenience store or other "licensable" off-site locations.

A Molnick Patent, U.S. Patent No. 5,800,268, also discloses a method by which a remote player may participate in a live casino game from a location remote from a casino. A player establishes an information link with a casino from an interface station which includes a video monitor and a keypad, where the keypad is game specific and unchangeable. The Molnick patent also uses cameras and discloses table card games. The betting scheme of Molnick is just as complicated as the actual table game. The system of Molnick is also not practical. While modems and phones lines are used, compression and encryption are not. Molnick also does not use player eligibility authentication. Molnick displays to the remote player an entire gaming table with a number of "live" players, which would enable card counting and team playing by the remote players, both of which are not acceptable to casinos.

A need exists for a practical remote casino-type gaming system that would meet state gaming regulations, which are promulgated mainly to ensure the fairness of the game and eligibility of the players, such as age and creditworthiness. A need also exists for a system which would provide a smooth progression from regulated casino gaming to regulated remote on-site and off-site gaming and eventually to regulated Internet gaming.

SUMMARY OF THE INVENTION

It is therefore an object of the invention to provide a practical but remote player-friendly casino-type gaming system that meets the gaming legal regulations, as promulgated by the various governmental jurisdictions. The key benefits are: (a) ease of play, (b) retains most of the excitement of actual live participation, (c) ability to control rate of play, thereby reducing player stress, (d) ensures a greater level of privacy, thereby limiting embarrassment, (e) better utilization of the existing personnel and facility infrastructure, (f) enables gaming multimedia video product creation, advertising and branding by the casino, (g) enables regulated off-site gaming, including Internet, and (h) facilitates effective novice player education.

Some of the technical features of a system according to the invention include data compression with a video Codec using, for example, J/MPEG and other application-specific compression techniques. Data encryption is provided using, for example, DES 128 and strong RSA encryption. Various communication pathways are used such as copper, fiber-optic, and wireless, to interconnect the disclosed subsystems. Various communication network protocols (e.g., IEEE 802.XX, ITU/CCITT V Series protocol, TCP/IP) and network topologies (e.g., ring, star) are used to implement networks such as, for example, LAN, WAN, VPN, Cable Modems, ADSL, Satellite (e.g., QAM), Internet, wherein the forward path from the multimedia video source needs, for example, about one megabyte per second (1MB/sec) data bandwidth capability and the return path needs capability in the range of about ten kilobytes per second (10KB/sec), with further reductions provided with evolving MPEG.x technology. A communication distribution hub enables multiple games to be fed in and routed to multiple remote player stations. Legally certified random number generators (RNGs) are uses to randomly select one source for video multimedia signals from several incoming gaming video multimedia sources, in an autonomous manner, for each game episode presented to the remote player, at the remote player station.

The system includes a number of features. Virtual gaming at a remote site uses legally randomized live video or pre-recorded video. Pre-recorded video could be obtained from prior casino security video storage tapes or from tapes of closed regulated tournaments. If a random pre-recorded gaming episode is selected by the remote player,

then its playback can be slowed down to reduce player stress. A remote on-site or off-site player bets, for or against, a live player while viewing either a live casino video signal or a pre-recorded casino video from any secure multimedia storage repository (e.g., disk, tape). Wagering rules for the games are simple as compared to more complicated live casino game wagering rules resulting in a new way of wagering on existing games, as well as the creation of new wagering games. Due to the simplicity of the betting rules, a remote player can concurrently play several dissimilar games at the same remote gaming station. The remote player can, in effect, virtually roam around a casino and virtually participate in a plurality of games without leaving the remote gaming station.

For remote gaming stations off-site of the casino premises, the remote gaming station is periodically monitored and recorded with a return path multimedia video camera/audio channel. Various biometric sensing systems are also used to validate a player's identity. By using currently available videotapes or disks of all licensed table games that are recorded and stored as per currently promulgated regulatory requirements, surveillance and security functions for all the live casino tables can be cost-shared with the disclosed remote gaming system. Casino surveillance and security is enhanced by the superior quality of the live game multimedia video data used for the disclosed remote gaming station purposes. The off-site remote gaming player station is at the same security level as a bank ATM machine, perhaps including even the co-located security guards. The touch screen is spill and shatterproof and an audible alarm makes the remote player stations substantially tamperproof.

The multimedia video data stream for a live or pre-recorded game can be processed in real-time to generate and remotely display multimedia synthetic video signal which show, for example, enhanced images of cards, dice or roulette, as well as the progress and outcome of selected live or pre-recorded casino games.

Regulated live play or pre-recorded restricted access storage repository-based multimedia video, of hired casino shills or invited professional gamblers or invited celebrities at the gaming tables, enables a licensed casino to become a provider of multimedia gaming content, certified by government gaming authorities, similar to the movie/television entertainment production industry. The equipment required includes that which is currently used in the entertainment video production, video cable-based and Internet-based video content delivery systems. Moreover, in an instructional mode of operation, novice players are instructed by example, on how to play the various games in a relatively stress-free environment, by recognized gaming experts. Moreover, the video presentation can be slowed down to enable ease of viewing of the gaming action for a novice player.

The present invention includes a legally-authorized remote gaming system which includes a multimedia video source at a casino which provides a live video or pre-recorded restricted-access video signal depicting a legally-authorized live casino game. A player accounting and tracking subsystem manages the accounts, player compensation rating and surveillance for a remote off-site player, as well as the on-site player on casino premises. A communication distribution hub connects the multimedia video source and the player accounting and tracking subsystem to the remote player station. The remote player station includes a display for displaying to a remote player the live multimedia video or the pre-recorded multimedia video signal depicting the legally-authorized, live or pre-recorded, actual casino game. The remote player station also provides gaming information which enables the remote player to place a bet and otherwise provide inputs via a touchscreen or other means. The remote player station also provides gaming information to enable the remote player to receive a payout by electronic means or by mechanical means for the casino game currently being displayed on the station display. Moreover, the display can be a conventional color monitor or a stereo 3D head mounted goggles. The goggles can also be used to restrict viewing access, to only the eligible individual players. Biometric sensors can also be incorporated into the head-mounted remote player station. Furthermore, the entire remote player station can be wall-mounted, to facilitate ease of installation and better space utilization.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and form a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention:

FIG. 1 is a comprehensive schematic block diagram illustrating a remote virtual gaming system which uses actual regulated casino live games or pre-recorded actual casino games.

FIG. 2 is a schematic block diagram of a remote virtual gaming system according to the invention which is entirely on the premises of a casino.

FIG. 3 is a simplified schematic block diagram of a "minimal" equipment remote virtual gaming system including data compression and encryption features.

FIG. 4 is a corresponding simplified video display incorporated in a "cashless" remote player station.

FIG. 5 is a simplified block diagram illustrating a remote virtual gaming system which uses image processing and data compression to provide images for a synthetic display and to provide an output having substantial data bandwidth reduction for sending, for example, an encoded image of a five of diamonds playing card, as illustrated in FIG. 6.

FIG. 7 is a flowchart showing a RNG array based game distribution system of the present invention.

FIG. 8 is a schematic block diagram of a remote player virtual gaming system which provides remote player authentication from a remote off-site location.

FIG. 9 illustrates an example electromechanical acceptor-validator sub-system, for use by a remote player.

FIG. 10 illustrates a touch-sensitive area of an example video display sub-system for use by a remote player.

FIG. 11 illustrates an example video display presentation on a display sub-system response screen.

FIG. 12 illustrates a typical sequential series of player actions which produce various responses.

FIG. 13 is a view of a player interface for a remotely-located player station showing on one screen three simultaneous dissimilar gaming response display panels and three corresponding player-friendly, touch-sensitive display screen areas.

FIG. 14 is a data and control flowchart illustrating operation of a remote gaming system according to the invention.

FIG. 15 shows a typical set of play mode related interprocessor information transfer sequences.

FIG. 16 shows a typical set of casino E-commerce roam mode related interprocessor information transfer sequences.

FIG. 17 is a comprehensive functional block diagram of the disclosed multimedia virtual gaming method and system, including interconnections to other casino-based systems.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to the preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings. While the invention will be described in conjunction with the preferred embodiments, it will be understood that they are not intended to limit the invention to these embodiments. On the contrary, the invention is intended to cover alternatives, modifications and equivalents, which may be included within the spirit and scope of the invention as defined by the appended claims.

The psychology of what makes a particular game "exciting" to a player is not clearly understood, as conceded even by veterans in the casino business. A typical approach to validating the attractiveness and consequently the potential success of a game is to conduct for a few months an expensive "field trial" on a casino floor and to monitor the "excitement and appeal" of the game, in terms of player usage and the consequential generation of actual revenue. However, this inventor asserts that a simplistic betting scheme involving only a minuscule amount of decision-making in a non-confrontational non-public environment is preferred by most players. This hypothesis is validated by economic data that about two-thirds of a casino's revenue is attributed to slots in contrast to revenue obtained from table games (e.g., cards) and other games (e.g., craps, keno, roulette). Moreover, due to the complexity of the required gaming infrastructure (e.g., equipment, trained personnel), the profit margin for slots is about twice that for all of the other games. On the other hand, many players, particularly younger players below the age of forty, consider video slot gaming to be quite boring.

The present invention makes the playing of non-slot games into "no-brainers" like slot games, without also eliminating the player "excitement and appeal" that non-slot games generate, so that a player can participate without the stress and potential public shame arising from a player's misjudgment and associated losses at a live gaming table. No other player can see what any particular player has lost, just like at a slot machine, and without player tracking, even the casino doesn't know. On the other hand, the present invention does not preclude the welcome recognition and acclaim that casinos typically bestow on winners in the casino.

An additional incentive for casinos to implement this invention is that they have a substantial long standing/traditional investment in non-slot gaming and it is generally acknowledged that non-slot gaming needs to improve its return on investment (ROI). However, the recent advent of unregulated Internet-based gaming with its computer-based random number generators (RNG) has put tremendous uncertainty into the previously sound business rationale for making billion dollar"(co-located casino/ hotel/ entertainment

/shopping) fixed casino investments. Moreover, RNG-driven video slots can be inexpensively replicated by thousands of unregulated entities on the Internet, subject only to mostly unenforceable regulatory issues, while it takes a substantial capital investment to maintain a live table (e.g., cards, craps, roulette) gaming facility with the associated player "excitement and appeal", that can only be generated by a live casino type of operation.

FIG. 1 illustrates a remote multimedia distributed, virtual gaming system 10 which interacts with a remote player 12. The system includes a multimedia virtual gaming content generation array 20 which is monitored by a virtual multimedia content acquisition sensor array 22. The outputs of the sensor array 22 are sent on a data/signal bus 24 to a regulatory surveillance control center server 26 and to a raw multimedia virtual gaming episode processing array 28. Processed output signals from the processing array 28 are sent on a bus 30 to a multimedia virtual gaming content playback array 32 for storage or directly to a multimedia virtual gaming content distribution center server, or hub, 34. Alternatively, a bus 33 provides stored processed signals to the hub 34 and to the surveillance control center server 26. The distribution center server is connected by a bus 36 to a player E-commerce server 38 and by a bus 40 to a player accounting, VIP tracking, and authentication server 42. A hotel reservation server 41 is connected through a bus 43 to the player E-commerce server 38 and to the player accounting, VIP tracking, and authentication server 42. The hotel reservation server 41 provides VIP player information to the accounting server 42. These servers 38, 41, 42 provide ancillary services to the system 10. The communication server includes a random number generator which randomly selects game content. The communication server 34 is connected by a virtual private network (VPN) signal line 44 to a remote player station 46 on the casino gaming premises. The communication server 34 is also connected by a signal line 48 to a regulated Internet server portal 50, which is connected through the Internet 52 to a remote virtual gaming station 54, which is located off of the casino floor site and which provides for presentation of games to a player, and which provides for player participation.

FIG. 1 provides a remote multimedia virtual gaming system 10 which presents a remote player 12 with virtual gaming video and audio information from actual casino games. By actual casino games is meant games which are actually being played by real players or restricted access pre-recorded games which have been actually but previously played by real players, both of which are played in a real, licensed casino or in a licensed restricted access tournament (e.g., invitation-only high stakes poker, celebrity poker). The multimedia gaming system uses live video and live audio presentations to provide a live casino environment to the remote player 12. Alternatively, pre-recorded restricted access video and audio are played back to the remote player 12 in an autonomous legally randomized sequence to provide a licensable virtual casino gaming environment.

The content generation array 20 diagrammatically shows three exemplary casino games being monitored/acquired according to the invention using the multimedia content acquisition sensor array 22 comprised of either analog or digitized video and audio sensors. A first live video image sensing camera system 60 and a first pair of stereo audio sensing microphones 62, 64 monitor a live roulette game table 66 in a licensed casino. A second live video image sensing camera system 70 and a second pair of stereo audio sensing microphones 72, 74 monitor a live card game table 76 in a licensed casino or at a tournament. A third live video image sensing camera system 80 and a third pair of stereo audio sensing microphones 82, 84 monitor a live craps game table 86 in the licensed casino. The video image sensing camera systems 60, 70, 80 are, for example, one or more (e.g., stereo mode) color and/or black and white video cameras commercially provided by companies such as Sony, Panasonic, CoStar, Kodak and Hitachi, with a nominal digital resolution of 640 x 480 (comparable to current consumer TV) pixels (or more), compliant with any video format, including NTSC, PAL, DTV, ATSC or other appropriate SMPTE standard, selected by those skilled in the art.

The output of this multimedia acquisition sensor array 22 is then processed in the processing array 28 to create a virtual gaming episode package for each game. The first step in this process is performed in a real-time content edit processing array 90 to, autonomously or manually, rapidly edit out images and audio that detract and distract from the game, including information that may enable the viewer (e.g., remote player) of the video to identify the individual live player, due to privacy considerations. Then this game episode captured on tape or computer memory is compressed in a real-time multimedia content compression processing array 92 using J/MPEG (or equal) for video and MP3 (or equal) for audio or other appropriate SMPTE standard as approved by the appropriate regulatory agency. Then the compressed episode is encrypted in a real-time multimedia encryption processing array 94 using DES (e.g., 128 bit), and/or RSA (e.g., 1024 bit public key exchange) or any authorized encryption standard, as per the gaming control board (GCB) that has jurisdiction. Note that the underlying theoretical foundation for encryption and RNG are related. The required video rate (e.g., 30 Hz) edit/compress/encrypt preferred by TV studio quality equipment can be purchased from Sony, Panasonic, JVC, Tektronics, Quantel, AVID or equal. This, preferably real-time, encrypted/compressed/edited multimedia game episode package is then stored in the playback array 32 on a disk, tape, or CD, or any other secure storage media for subsequent gaming content distribution. This episode package can also be directly routed, in near real-time, to the content distribution center server, or multimedia communication/distribution hub, 34.

The securely encrypted and compressed live video and audio signals from the video camera systems and the stereo microphones are also connected to, recorded, and then subsequently played back with a VCR array, hard disk array or solid state disk array, as typically illustrated by utilizing a secure, compressed virtual gaming episode data base using disk or tape farm system 96. The VCRs are commercially provided by Sony, Magnavox, Panasonic, RCA and others. The disks are provided by Seagate, Maxtor, Quantum, Loronics, IBM and others. Other bulk storage media include optical and DVD, from Toshiba, JVC and others.

The multimedia communication distribution hub 34 has a number of input/output (I/O) ports connected, directly or indirectly, to the I/O ports of the cameras, microphones, and disk/tape VCRs. The multimedia communication distribution hub 34 controls distribution of video, audio, and control signals. The communication hub 34 also functions as a switching router with audio/video output signals being selected from inputs provided by video camera systems or disk/VCRs, using a random selection method controlled by a certified random number generator (RNG), of the numerous multimedia video packets. The communication hub 34 is, for example, a bank of video, analog or digital, switches commercially provided by companies such as Cisco, Lucent, Maxim, Brocade, Gennum, Elantec or Analog Devices, controlled by a certified RNG, running on a fast microprocessor such as a 400 MHz Intel Pentium II microprocessor from Intel, IBM, Compaq or equivalent from Sun, Motorola or others. The communication hub 34 functions as a RNG driven multiport switch for selecting among incoming multimedia video channels to outgoing distribution channels, including 1000 base-T fiber-optic or video coax or copper wired or wireless (spread spectrum) transceivers or other physical layer communication pathways.

The communication hub 34 has an I/O port which is connected by a virtual private network (VPN) signal line 44, which provides a wired, fiber-optic, wireless, or other connection link to the main input port of the remote player station 46. The security of the remote player station 46 is controlled by the casino, by virtue of it being on the casino gaming premises or by being under the direct physical control of the casino, such as in a casino hotel room that has appropriate sensors, as described later. The communication connection link 44 is, for example, a fiber-optic 1000 base-T rated cable or equivalent communication pathway. Various communication protocols (e.g., IEEE, 802.XX, ITU/CCITT V Series) and topologies (e.g., star, ring) can be used to implement the required secure authorized virtual private network interprocessor connectivity.

The remote on-site player terminal 46 includes a remote processor 100 which performs appropriate command, control and routing functions. The remote processor 100 sends video, audio and control signals to a video monitor 102 and to speakers 104. A wager

acceptor subsystem 106 and a wager payout 108 subsystem provide betting information and payouts to the remote player 12. The remote processor 100 is a 16 to 128 bit microprocessor from Intel, AMD, Lucent, Texas Instruments, Phillips, Motorola, Hitachi, Sony, SGI, Sun or equal, using various real-time operating system (OS) software such as Windows CE (from Microsoft), PSOS (from Integrated Systems), Inferno (from Lucent), or any secure compact real-time operating system, that has been approved by a governmental gaming control board GCB. The remote processor and associated I/O interface 100 can also be implemented using field programmable gate arrays (FPGA's) from Altera, Xylinx, Lucent or equal. Using FPGA's provides an additional level of security by protection (e.g., tamper-proofing). The remote processor 100 is coupled to the video monitor 102 with an 8 Mbyte buffered memory display screen with a 256 x 256 point or better touch screen provided by Microtouch or equivalent. Alternatively, a monoscopic or stereoscopic (3D) color or black and white display is presented to a player 112 with head-mounted goggles 114. Typically, no remote terminal disk, CD, or tape drive usage is required by the designer to implement the functionality, nor is it encouraged by the regulators. The remote player station 46 is contained in a tamperproof, rugged, spill-proof, alarmed safe-like enclosure.

Another I/O port of the communication hub 34 is connected by the signal line, or communication link 48 to an I/O port of an authorized Internet server 50, located in a legally sanctioned gaming property in a sovereign state or Native American territory, which communicates through the Internet media 52 with a 2-wire or 4-wire telephone cable or other secure communication link to an off-site licensed Internet remote player station 54. The regulated Internet remote off-site player station 54 includes an Internet client Transmission Control Protocol/Internet Protocol (TCP/IP) stack 120, a remote player station 122 (similar to the on-site casino station noted above), and biometric authentication equipment 124, from Sensar or equal for retinas, from Digital Privacy or equal for fingerprints, from Symbol Technology or equal, for 2D bar code based photo ID/driver's license, which are used jointly or severally, to continuously (e.g., every 5 seconds) verify the identity and eligibility of the player at that remote station. The off-site player station 54 or the remote player station 46 array include a flat panel plasma or liquid crystal or cathode ray tube video display 130 such as commercially provided by Sony, Sharp, Fujitsu, NEC, Toshiba, or equivalent with a touchscreen provided by Microtouch or equal and typically shown in FIG. 1. The off-site player station 122 typically has no disk, CD, or tape drive, while being enclosed in a tamperproof ATM kiosk-like container, otherwise functionally similar to the on-site player station 46.

The flat panel plasma or liquid crystal or cathode ray tube video display 130 is adapted to be mounted, for example, on a wall 132 of a casino premises. In this case, the flat panel video display is part of a gaming station which is connected by a cable 134 or,

alternatively, by a cable 136 to the communication server 34. The cable 134 is embedded in the wall 132 of the casino premises, and alternatively, the cable 136 is routed along the lower edge of the wall 132 near the floor 138 of the casino. These cables are then connected to a signal path 140 which connects to the VPN signal line 44. For use in the Internet player station 54, the signal path 140 is appropriately connected to the Internet system 52. For a casino location, the signal path 140 can be a power distribution wire in the casino which is adapted for carrying data signals or an infra red communication link, which also carries data signals.

To support a large array of remote player stations (e.g., 46, 54) will typically require a corresponding array of processors within the communication distribution hub 34. This is due to the corresponding array of rapidly executing (e.g., at most 10 millisec/random #) RNG's, required by GCB, for each player station, as well as, the corresponding array of multimedia virtual gaming episode packets to be managed (e.g., routed), by the distribution hub 34.

It is noteworthy, that the disclosed high speed certified RNG array embedded in the communication distribution hub 34, also provides a means of transmitting and distributing a certified encrypted array of random numbers to a corresponding array of on-site or off-site player stations 46 or 54, thereby significantly reducing the required secure communication link 44 or 54 bandwidth. This functionality can also be utilized to implement local area (e.g., casino) or wide area virtual private network-based (e.g., covering an entire state) progressive gaming systems.

Another I/O port of the communication hub 34 is connected through the bus 40 to an I/O port of the player accounting server 42, which also provides player authentication, usage tracking and rating compensation functions. The accounting server 42 is, for example, a 400 MHz or better, dual or otherwise 24 hour x 7 day fail-safe Pentium II personal computer with a 128 Mbyte SDRAM, 32 Mbyte display RAM, and a 144 Gbyte hard disk farm operating at a sustained 40 Mbyte/sec rate or the equivalent thereof, from IBM, Dell, Intel, Compaq, Gateway, Sony, Hitachi, HP, Motorola, Apple, Sun or others. The player eligibility authentication function ensures that the player is really who he or she claims to be. The tracking function non-intrusively determines a player's gaming habits and intercepts the actual utilization of the various gaming facilities by each player. That information is then used to appropriately "rate and compensate" a player with promotional and other bonus offers, such as travel/hotel/food/entertainment reimbursements. The compensation and promotion budget for each of the five major properties in Las Vegas, for example, is currently a significantly large dollar amount (e.g., $100M per year).

Although only three dissimilar types of games are illustrated in FIG. 1, the gaming choices for the remote players 12 or 112, include a large number of card games such as, for example, Blackjack, Stud Poker, Baccarat, and other games such as Roulette, Craps, Keno, slots and other newly deployed slot type games such as Monopoly. The present invention also allows a remote virtual slot players to participate in the outcome of a particular lucky slot machine, which is being played by a live slot player.

The terms "game" and "gaming," as used herein, include not only actual casino games with live players but also all types of electronic, electromechanical or mechanical gambling and casino game facsimiles (as defined in 15 U.S.C. 11719(a) (2) or (3)). These include games such as Faro, Monte, Roulette, Keno, Bingo, Fan-tan, Twenty-One, Blackjack, Seven-and-a-Half, Big Injun, Klondike, Craps, Poker, Chuck-a-Luck, Chinese Chuck-a-Luck (Dai Shu), Wheel of Fortune, Chemin de Fir, Baccarat, Pai Gow, Beat the Banker, Panguingui, slot machines, video Poker machines, etc.; games of skill and/or strategy such as Chess, Checkers, Backgammon, board games such as Monopoly and Scrabble, card games such as Pinochle, Hearts, Spades; video-based games such as Doom, Riven, Pong, Pac Man, Myst; video games based on sports such as golf, baseball, football, basketball, soccer, rugby; arcade type games; non-house stake and parimutual games between two or more players; and games defined by IGRA (Indian Gaming Regulatory Act) as Class II games.

For the pre-recorded mode of play, the communication hub/switcher 34 autonomously provides legally randomized video playback which precludes card counting based wagering strategies, as detailed for example in the book "Beat the Dealer" by Thorp. Recordings of actual games are obtained, for example, from previously recorded casino security tapes, or from closed tournaments, such as invitation-only high-stakes poker tournaments for professional gamers or celebrities.

It is noted that governmental bodies such as the Nevada (NV) Gaming Control Board (GCB) currently have surveillance requirements which require the deployment of at least one video camera at every ongoing licensed casino game. In addition, the video cameras that are monitored by lightly manned surveillance facilities are also backed up by continuous video recordings (e.g., VHS video tape) and by security personnel on the casino floor. The present invention enables the casino security and surveillance functions in the surveillance control center server 26 to be cost-shared with the remote gaming system 10 via communication buses 24 and 33.

The disclosed remote gaming system will typically have video quality which is an improvement over that currently used to meet a casino's regulatory security and surveillance

requirements. As a result, improvement in the quality of a casino's camera surveillance system can be cost-justified by sharing the increased resolution and superior video data quality required of a remote virtual gaming system, to ensure remote player appeal. For surveillance purposes, an entire card table is typically acquired on video tape using a single video camera. A remote virtual gaming system will typically require better video image quality or more than one video camera to be deployed at each card table to capture what is happening at each live player's station. Consequently, superior quality video data is made available for surveillance, for either on-line or off-line purposes, thereby improving the surveillance system effectiveness. Note that disputes between casinos and customers can expose casinos to unfavorable publicity and even to litigation. Many of these disputes are currently resolved, both in and out of court, using the casino's existing surveillance video tapes and disks. VHS recorders from Panasonic, RCA, Sony and others are typically used. Disk farms from IBM, Loronics and others are typically used. Casinos are typically required by GCB regulations to continually record and retain the surveillance video tapes for a period of one week, after which they may be erased and reused. This disclosure makes these video tapes a more valuable casino asset by productizing each game episode into a reusable multimedia gaming episode content. However, it is noted that due to privacy, confidentiality and security considerations, the faces and other identifying features of individual ad-hoc live players cannot typically be replayed, unless the casinos have prior authorization to do so.

Casinos often have individuals on their payroll, called shills, or house players or celebrities under contract, who play various card games such as Blackjack or other games such as Roulette and Craps to generate gaming "excitement" on the casino floor to attract visiting prospective casino players. The present invention extends this legal activity of these hired players by having one or more house gaming tables completely reserved for these skilled professional house players or for celebrities hired for this purpose. These legally-authorized games are then electronically acquired on multimedia video and electronically routed to the remote player stations, on-site or off-site via the distribution hub 34. Indeed, the live players at these house tables could be world-class card players, tournament poker players, and other professional game players. Since these house players are employed by the casinos and are not independent live players, the casinos do not lose money at these live restricted house-only tables, nor are they exposed to privacy issues. Play at these restricted tables is an "entertainment show" designed to stimulate the visiting casino player's enthusiasm and reduce their nervousness or fear for playing at the various table and other games offered by the casino.

Moreover, the games at the live house tables can also be played in a closed "secure" casino-controlled environment, recorded and then autonomously randomly selected and

routed to the remote player stations. These legally randomized recorded games can also be sequentially routed to remote player stations, provided there is no possibility of a "sting" situation in which the gaming episode encrypted multimedia video signal can be intercepted and the game outcome can be either modified or substituted for. This invention enables a licensed casino to become a video gaming content provider with content which is (almost automatically) certified by a governmental agency such as the Nevada Gaming Control Board (NGCB) at the point of creation. This multimedia video gaming content product is conceptually similar to that produced by the movie/TV entertainment industry, which produces and records video entertainment content for sale to audiences. Indeed, this disclosure further blurs the distinction between the gaming and entertainment industries.

In order to conduct a legally certified game, a governmentally licensed and regulated casino is liable and responsible for ensuring that each of their games is executed "fairly" by their house employees, such as card dealers, in a procedurally predefined manner within a published set of rules. Any changes to a certified game, such as procedural changes, look-feel changes and pay table changes, require recertification by a appropriate governmental gaming control board such as those found for example in Nevada (NV), New Jersey (NJ), Illinois (Ill.), Wisconsin (WI), Michigan (MI), Colorado (CO), Mississippi (Miss.), Louisiana (LA), and the various Native American nations.

FIG. 2 is a schematic block diagram of a remote gaming system 150 which is on the premises of a casino or which is otherwise monitored by the security/surveillance department of a casino. As in FIG. 1, a number of video camera systems and microphone arrangements as represented by reference characters 152, 154, are provided in a multimedia virtual gaming content acquisition array 156 to monitor various respective casino games 160, 162 in a multimedia content generator array 164. In this context, a disk or tape playback farm 170 is provided, as previously disclosed as part of a multimedia content playback array 172 to both record video signals and to subsequently randomly playback pre-recorded video signals. The output signals of the video acquisition array 156 and the playback array 172, are provided to a communication hub and switcher arrangement in a multimedia virtual gaming content episode packaging and distribution system 176 which includes a video switch/distributor/selector and digitizer 178 such as a video switch commercially provided by Maxim, Analog Devices, or Elantec. The video switch/distributor/selector and digitizer 178 includes a legally approved autonomous random number generator (RNG) for selection of one of a plurality of video sources or prestored episodes, the signals from which are transmitted to a virtual gaming episode player presentation and participation station array 180 which includes a number of remote player stations, typically shown as 182, 184, 186, through secure authorized direct

connections or secure virtual private network (VPN) connections, as previously illustrated in FIG. 1.

FIG. 3 is a simplified schematic block diagram of a simplified remote gaming system 200 for use within premises controlled by a casino. An acquisition system 202 includes an analog video camera system 204 and microphones 206, 207 provide signals from a live regulated game 208 to a digitizer, compression, and encryption module 210 which, if necessary, converts the analog camera video and audio signals with a digitizer from, for example, Analog Devices or Maxim, to a digital format. Compression is done, for example, with MPEG2 standard compression chip sets provided by C3 Microsystems or Zoran or equal. Encryption is done with chip sets and firmware from RPK, or Cylink or Phillips or equal. The multimedia video and audio data are provided through a secure physical communication pathway 214, fabricated from fiber-optic or coax or power cable or wireless link, to a player terminal 216, which is part of a presentation and participation system 218, for appropriate decryption, decompression and then presentation on a display.

FIG. 3 illustrates the importance of data security in practicing the present invention. Casino management and the governmental regulatory agencies are very concerned with electronic intruders tapping into the casino communication network and manipulating any player terminal, including a slot machine, to fraudulently declare a jackpot. This type of intrusion could be done with or without collusion by casino employees. Consequently, all communication datalinks are encrypted with triple DES encryption, RSA (public key exchange) encryption, or other approved secure encryption means. Otherwise the entire system is impractical and undeployable, because it will not be approved by governmental agencies. Prior to encryption, the video data has an appropriate identification (ID) attached such as, for example, a "product source watermark" incorporating the casino/table ID, for example. A date/time and video frame ID may also be inserted to provide an additional level of tamper-proofing. As noted earlier, the video data is then compressed using, for example, J/MPEG, wavelet, or any other proprietary but GCB approved techniques. It can not be overemphasized that the Nevada Gaming Control Board (NGCB) will not license a player station which lacks an adequate level of secure communication, utilizing encryption based protection.

FIG. 4 shows a simplified display layout 250 for a player interaction screen shown on the video monitor of player stations as shown in FIGS. 1, 2 and 3. Starting at the bottom of this Figure, a display area 252 displays the player credit balance of $XXXX. Above this is shown a display area 254 for a simple pay table 2x which means that, for every one dollar wagered, a remote player can win two dollars. Above that a screen area 256 presents the result of the game in dollars won. Above that a screen area 258 shows the actual amount

wagered and the particular player number (P#) selected. When the selected game is in progress, the screen display area 260 at the top end of the player station display, displays the live or secure pre-recorded video episode image stream, preferably at the eye level of the remote player. This remote player station can be floor mounted r wall mounted or a handheld portable, subject to GCB approval. Note that wall mounted player stations are particularly attractive because of their space and cost effectiveness. Indeed video gaming stations currently deployed in casinos could also be repackaged in a wall mountable version.

FIG. 5 illustrates a remote gaming system 300 suitable for use with player stations which are off-the-premises of the casino and therefore beyond the immediate reach of the physical security personnel of the casino. A content creation and acquisition system 302 provides multimedia video information from various game specific cameras 304, 306, 308, provided to a content distribution server array 310 which includes an authorized Internet communication server 312 within casino premises or within casino-controlled premises. The server 312 provides image processing to enhance the raw images from the video sources by creating synthetic video images using image enhancement techniques. The synthetic video images are data compressed and are transmitted at a much smaller bit rate than the incoming game related multimedia camera video signals through an authorized Internet portal 314 located in a sovereign state or Native American territory with a low speed, e.g. 28.8 Kbps, modem. Encryption is also provided for secure transmission through the authorized Internet portal 314 to a remote player station 316. The server 312 also provides an encoded display (ED) signal to display, for example, the image of a five of diamonds playing card, prestored at the remote player station as illustrated in FIG. 6. Thus, rather than transmitting the image of a "five of diamonds", an encrypted digital word representing the "five of diamonds" is transmitted over the regulated Internet or other gaming related virtual private network. For example, the four suit of cards are encoded as hearts (11), diamonds (10), clubs (01), spades (00) in the two right most LSB's. The thirteen cards are encoded as four higher order bits, thereby resulting in a 6 bit code (010110) providing a binary representation of "five of diamonds". This binary code is then encrypted using DES, for example, resulting in a much larger word length that is then distributed or otherwise utilized by the disclosed secure regulated gaming system.

Thus, by using real-time image processing techniques to generate encoded video, the video data stream from each of the live games is processed in real-time to generate and remotely display the progress and outcome of each of the ongoing games. For instance, as previously mentioned, the cards played in a card game can be identified via image processing at each live player's seat at a casino table and then transmitted to the remote off-casino site player gaming station in real-time. By encoding the current status, progress and outcome of each game (e.g., via image processing) at the live player's gaming station in the

casino, the video communication bandwidth required from the virtual private network or Internet is significantly reduced. This type of image processing can also be used to enhance the utility of the current casino video surveillance tape with a 7-day archive requirement, imposed by the GCB of various states, such as Nevada, Colorado, and New Jersey.

FIG. 7 shows a RNG array based game distribution system 320. The remote terminal #K 322 or #K1 324 located on-site or off-site are connected via a secure Internet 326 or a secure virtual private network (VPN) 328. A secure Internet portal 330 and the VPN head end 332 is co-located with the high performance computing array based server 334. A multiprocessor array 336 embedded in the server 334 generates a vector of random numbers 338, that are generated using RNG's that have been certified by the appropriate GCB. The multiprocessor array can be a multiprocessor board from Mercury Computer Systems or Sky Computer or Alacron or Analog Devices or equal. Each of remote terminals 322, 324 receives one of the encrypted random numbers and interprets it to generate the game outcome in conjunction with the particular game selected by the remote player. The available games can be built into the remote terminal player station 322, 324, or can be inserted via a cartridge 340 into the player station. This architecture is similar to conventional standalone video gaming terminals except that the RNG is located at a centralized multiprocessor based distribution server, rather than at each individual player station. The game related video does not have to be sent down from the distribution server 334, but can be locally stored and retrieved based on the specific random number received by the remote terminal player station 322, 324. However, in the Internet segment of this architecture, the selected game can also be downloaded from the server to the player station, using JAVA or equal software technology, subject to GCB approval.

A new generation of games based on receiving a multiple set of random numbers sequentially can be designed and implemented by those skilled in the art. Note that the remote player station 322, 324 cannot be readily tampered with to declare a false win, because the distribution server 334 "knows" all the random numbers that were generated. Moreover, this random number distribution architecture is very reliable and efficient and is directly adapted to wide area progressive gaming with several roving jackpots.

FIG. 8 illustrates a remote gaming system 350 which provides player authentication from a remote player terminal site through communication links such as, for example, from a regulated Internet portal located in a territory, such as a sovereign state or Native American territory. For remote, otherwise "insecure" gaming stations outside of a casino, such as, for example, hotel/motel rooms or convenience stores, the present invention requires that the player activity at each of these remote gaming stations be continuously monitored and recorded at periodic intervals, such as every five seconds, subject to GCB

concurrence, with a return path multimedia video-camera/audio channel. Other techniques such as, for example, biometric-fingerprints/retina, driver's license pictures, and credit cards are also employed to ensure that, at all times, each individual player at a remote otherwise "insecure" site is of a legal age (e.g., over 21). Variants of the "V" chip, which are currently used in consumer TV sets from RCA, Sony and others, and which enable parents to control the access by underage individuals, can also be gainfully employed as an additional protective measure in a "layered defensive" access control implementation strategy. Additionally, the display device can be monoscopic or stereoscopic head-mounted goggles that restrict viewing to the wearer. Other restrictions that could be promulgated include prohibitions on underage individuals being within 12 feet of the player station with stiff penalties (e.g., $10K) for violation, including imprisonment, for example, for one year. A GCB will not approve or certify any off-site remote player station without a player eligibility verification feature that is not susceptible to deception by the player and/or his cohorts. Thus the off-site room (e.g., hotel room) must be instrumented with additional cameras and other sensors (e.g., motion detection) to ensure that only eligible individuals are in the proximity of the player station in the room.

The remote gaming system 350 of FIG. 8 includes a content generation 351 and acquisition array 352 which includes a plurality of video camera systems with microphones 354, 356, which monitor a plurality of corresponding live games 358, 360. The video and audio information is fed to input terminals of a distribution server 362 which includes an authorized Internet gaming portal server 364 located in a sovereign state or Native American territory, which provides digitization, video/audio streaming, data compression, and data encryption. The gaming distribution server 364 is, for example, a 400 MHz dual redundant Pentium II with 128 MB of SDRAM, 32 MB of display RAM from Intel or Sun, or NEC or Sony or equal, a TCP/IP or other appropriate protocol stack, a video Codec from Intel, Analog Devices or equal, a compression chip set from C3 Micro, Zoran or equal, and an encryption chip set from a DES and/or a RSA licensee. Downloaded data is sent through an authorized Internet pathway 366 at, for example, a 1 MB/sec rate to a presentation and participation module 370 which includes a remote licensed player station 372. Uploaded data is sent through the authorized Internet 366 at, for example, a reduced 10 KB/sec rate back to the server 364. The player station 372 provides player information back to the server 364. The player station 372 thereby provides a game display and a player touchscreen. The player station also decrypts and decompresses data. A biometrics sensor module 374 exports face, eye, and/or voice information packet, from a video camera system 376 to the player station 372 for transmission to the gaming server 364. The player station also provides the gaming server 364 with driver's license related bar coded information using a Symboltech, or equal, 2D bar code system, a digital identity card using Drexler technology, or equal, and finger print data from Digital Privacy, or equal, for example.

Casino floor space is one of the most expensive kinds of developed real estate, ranging in price from $1000 per square foot and on up. Consequently, utilization of wall space, for example, along corridors, for player gaming stations is an important embodiment of the present invention. With GCB approval, an entire remote player station can be built into appropriate walls of a casino, for example, along corridor walls with the "attract" mode of the player station being active. Both conventional video gaming play stations and the multimedia player gaming stations according to the present invention can be implemented in a wall-mounted configuration, using flat panel displays (FPD)s from Sony, Panasonic, NEC, Hitachi, or equal. Physical layer connectivity is provided by cable either imbedded in the walls or along the lower edge of the wall at floor level. This is important from a cost perspective because it enables existing casino facilities to be economically retrofitted to accommodate a remote player station according to the present invention. Digging underground passages for cables and conduits on an existing casino floor is very disruptive and expensive. An alternative to using cables is to use secure wireless communication components from Harris, Texas Instruments, QualComm, Philips, or equal. Note that the implementation of the player station front panel as disclosed, for example, in FIG. 3 is further simplified by using "cashless" wagering with no coins or bills and using only credit cards, smart cards, or other casino-issued cash equivalent.

FIGS. 9-12 diagrammatically illustrate an example of one embodiment of several elements of a remote player interface for a remotely-located player station.

FIG. 9 diagrammatically shows an electromechanical acceptor-validator subsystem 400 for a video display station. This subsystem physically handles inputting and outputting money and money equivalents to the system by a remote player. This subsystem includes, for example, four generic physical input and output ports. A coin slot 404 accepts or dispenses coins, tokens, chips, or the like. A currency slot 406 accepts currency. A card slot 408 receives cards, such as credit cards, debit cards, smart cards, or the like for debiting and crediting money to a remote player's account. Note that the player is paid back in the same currency denominations and currency type that was originally inserted into the remote player station. This currency matching procedure is necessary to comply with the federal (IRS) and state anti-laundering laws (e.g., NV Reg. 6). A coupon slot 410 is provided so that, if the payout amount is large, then the casino typically prints out a coupon that can be converted to cash at the casino cashier's cage. Note that the computer/terminal at the cashier's cage is linked to the casino hotel/VIP server and the player accounting server, which in turn is linked to the remote player stations, to ensure ease of authentication and regulatory compliance.

FIG. 10 illustrates a touch-sensitive area 420 of a video screen for a remote player station. The touch-sensitive area 420 includes a number of smaller touch-sensitive selection areas, called action buttons. As described below, action buttons are touched by a player to select certain game functions.

FIG. 11 illustrates a video presentation and response screen area 430 which displays various video responses and/or graphic presentations by the system to the action buttons. The multimedia video presentation can also be provided by using head mounted monoscopic or stereoscopic (3D) goggles, such as those available from Kaiser Aerospace, or equal, particularly if they enhance the virtual gaming experience for younger, age 21 to 35, players. Moreover, head mounted goggles restrict unauthorized access to gaming and enhance player privacy (e.g., win/loss and net credit balance is hidden from passers by. Furthermore, by incorporating a miniature camera to within the head mounted goggle assembly to acquire an image of the remote player's retina also enables the player accounting server 42 of FIG. 1 to periodically authenticate the player, as noted earlier in FIG. 8.

FIG. 12 shows a number of action-step balloons, labeled (nA) which are used to represent various sequential steps followed by a remote player in the operation of the remote player station. A remote player touches the action buttons shown in FIG. 10 to make his or her selections. FIG. 11 shows a number of response-step balloons, labeled (nR) which indicate corresponding system responses to the action-step balloons (nA), where these system responses are displayed on the video presentation and response screen area 430 of FIG. 11. This representative action (A), response (R) sequence is shown in FIG. 11 the logical design process for facilitating player friendly interaction to enable those skilled in the art to implement other possible game presentation sequences.

Referring to FIGS. 9, 10, 11, 12, a typical play sequence is described, as follows:

First, in activity step 1A, the remote video player initially inserts money, in an acceptable form, such as coins, bills, or credit card, or smart card, or "cashless" player tracking card, into one of the respective slots 404-410 in the electromechanical acceptor-validator subsystem 400 of FIG. 9 to establish the remote video player's creditworthiness and age eligibility, that is, over age 21, based on his possession of the appropriate data on a legally issued card. Note that this does not preclude insertion of stolen or otherwise unauthorized cards by a dishonest player. In the corresponding response step 1R, the system responds by having a presentation and response screen area 450 display the remote video player's current credit balance in a credit balance area 451.

Second, in activity step 2A, a remote player touches one of the action buttons in another touch-sensitive subarea 452 of the video screen. These action buttons include, for example, a roam button 460, a card game button 462, a dice button 464, a roulette wheel button 466, or a button for any other game offered by a licensed gaming property. In response step 2R, the presentation screen responds, for example, with an appropriate live or pre-recorded multimedia video episode package in a response screen area 470. When the roam action button 460 is selected, the remote video player gets a video tour of the entire casino property. A specific gaming area is selected by touching the respective card, dice, or wheel buttons 460-466 in step 2A concurrently. Below the roam button 460, the live button 472 enables the remote player to view the ongoing live game type selected. Otherwise, a playback speed control mode is active and the playback viewing rate can be accelerated or de-accelerated, as selected by the remote player with a playback speed slider 474. By de-accelerating the presentation rate of the "playback" mode, the remote player can reduce the level of stress. Note that casinos expect their card dealers to average about 50 card games per hour; this can be very stressful, particularly for a novice player sitting down at a live casino table.

Non-gaming related selections shown in the alternative screen area 480 in FIG. 10 are activated by double-clicking the roam button 460. Optionally, this casino specific tour includes various shops and entertainment shows available. Product and service purchases and show reservations can be made and personal messages such as e-mail and voice-mail can be received and sent, using the touch screen display, if desired, by selecting E-commerce related buttons 482, 484, and 486, respectively. As noted above, these choices are visible only after double-clicking the roam button 460 of FIG. 10. A corresponding roam video stream is presented in a response screen area 470 of FIG. 11. Specific choices associated with E-commerce shopping, entertainment shows, and interactive messaging including even stock/commodity trading are casino property management dependent and can be appropriately implemented subject to GCB concurrence. Double-clicking the roam button 460 also causes the card button 462, the dice button 464, and the roulette-wheel button 466 to be no longer visible and therefore not selectable on the touch screen. Below the roam button 460, the live button 472 enables the remote player to view the ongoing live non-gaming activities offered by the casino property (e.g., trailer of available shows). The rate at which this multimedia video is displayed in the response screen 470 of FIG. 11, can be controlled by the player, by adjusting the playback speed control slider 474, provided the live button 472 has not been previously selected.

The primary purpose of "roaming" is to enable the remote video player to decide what specific table number (T#) and player number (P#), either live or pre-recorded, to wager on, either for or against, the selected player. Typically, the identity of the live or pre-

recorded player is not disclosed, visually or otherwise, because of privacy issues. However, the identity of the live or pre-recorded player may be disclosed, if the selected table/game is a game sponsored by the casino using casino employees, professional gaming invitees, or celebrities such as, for example, the cast members from the movie "Casino" or "Rounders", depicting poker players. As a result of this roaming mode, a remote video player can choose to participate in one or more ongoing or pre-recorded, regulated gaming activities such as cards, dice/craps, roulette wheel, etc. Any new games introduced by the casino can also be seamlessly integrated into this disclosed system, by installing a multimedia video content acquisition sensor array to monitor any new live game.

Third, in activity step 3A, the remote video player touches one of the action buttons in a touch-sensitive subarea 490 of the video screen. The action buttons in this area include an "any" action button 492 or a "specific" action button 494. The "any" action choice is simpler and directs the system to use certified random number generators (RNG) to randomly select an ongoing live or pre-recorded game in an autonomous manner and to present that game on the response screen area 370 of the player station and to present the table (T#)/player (P#) in a response screen area 496. Moreover, a "simple" set-up button 495 is also available, as a part of the above-mentioned "third" group (i.e., 3A) of actions, thereby "setting up" all the subsequent choices for the novice player. For instance, the wager amount could be automatically set to the smallest allowable amount (e.g., $1.00), the lowest risk player would be selected (i.e., player #0), etc., as per 498 and 520 in FIG. 10.

The selection of the "specific" action button 494 requires the remote video player to also input a specific table (T#)/player (P#). The player first selects T# by repeatedly pushing a T# touch button 496 that causes the T# to be automatically indexed upwards, until the player stops at XX. Then the player selects the P# by repeatedly pushing a P# touch button 498 that causes the P# to be automatically indexed upwards, until the player stops at YY. Note that player #0 is the house/dealer. A response screen area 500 now displays a pay table 502, which shows what the remote video player will receive, if the live player (P)# on whom the wager is placed wins. Typically, wagering with the house (i.e., player #0), results in a significantly smaller win payback, for example 10%, whereas a win against the house, by any other player, is typically "double your money back" or 100%. The pay table 502 on the screen informs the remote video player, in advance, what can be gained or lost, if a wager were to be made by him in a timely manner.

The NV GCB considers each "distinct" set of "wagering rules" with a corresponding "pay table" as a "distinct" game that must be separately "certified". Thus, even when one of the rules is changed with a corresponding pay table change, recertification is required. The following details the significantly simplified wagering rules for currently deployed casino

floor games that are played remotely, as per the present invention. Each variation is considered to be a separate game with a good example of variants being the numerous video poker variants. The disclosed novel wagering concept enables any current or future game that requires one or more "live players" (LP), to be included in this novel gaming paradigm. All current or future games, by definition, entail at least one live player in a regulated casino environment. Therefore, this disclosure also includes these future games or other games not mentioned herein, because of the broad applicability of the disclosed simple but novel "for or against" wagering concept.

In all cases, remote player station touch screens are implemented to enable a remote player to make wagers and decisions in a relatively stress-free and timely manner, as compared to the stress experienced by the live player at a table in the casino. As noted earlier, casinos train and expect the card dealer to deal about 50 games per hour in a procedurally correct manner, otherwise the "productivity" of the dealer comes under the close scrutiny of the casino floor supervisor.

One important aspect of this invention is that it enables the "remote player" (RP) to place a wager on a "live player" (LP), thereby making the wagering decision simple, just like placing a wager, without serious thinking, in favor of one of two opposing teams or a particular horse in a horse race. Even a "one horse race with a time deadline" can be accommodated within this paradigm, and so can live slot gaming. Live player based wagering can be done for any card table game such as, for example, Blackjack, Multi-Action 21, Mini/Baccarat, Pai Gow, Caribbean Stud, 7 Card Stud, and Texas Hold'em. Simple "for or against" wagering can also be done on Craps, Roulette, and Slots. Those skilled in the art can also devise more complicated wagering schemes and the corresponding pay table odds, subject to player appeal and excitement generated.

The remote player (RP) doesn't need to know the specific rules of the selected game that he wishes to virtually participate in. The remote player only needs to be lucky and/or smart enough to pick a live player on a winning streak. This wagering paradigm only requires "matching up" with or "wagering on" a specific live player. A simple pay table is 2x, if the selected live player wins. If a remote player is diligent enough to learn the specific rules and play attentively, then the remote virtual player might as well play at the live gaming table, like a typical live player does. Note that by playing a virtual game at a remote player station that can also be slowed down using slider 474, the novice player can reduce his anxiety of playing at a live table with others watching; this is the underlying instructional facet of this disclosure.

Other simple wagering variants that do not always require "matching up" with a specific live player are disclosed in the following examples of simplified games which are variants of conventional casino games; the card game specific remote player input screens as in FIG. 10 must be appropriately designed, by those skilled in the art to accommodate these are other games not mentioned or detailed herein:

Craps/Dice: DICE-MATCH (TM) or EASY-DICE (TM) - simply "match" the dice #: (A) Match totals: call 2 or 12, pay 30x; call 3 or 11, pay 15x; call 4 or 12, pay 10x; call 5 or 9, pay 6x; call 6 or 8, pay 4x; call 7 pay 3x, (B) Match BOTH dice: call "specific same" (e.g., 1&1, ..., 6&6), pay 30x; call "specific different" (e.g., 4 & 6, 3 & 5), pay 15x, (C) call "same", pay 3x; call "different", payback 1.1x (i.e., net gain 10%).

Roulette: BALL-MATCH (TM) or COOL-ROLL (TM) - simply "match" the ball location (e.g., #, or color, or odd #, or even #), pay winner as per usual Roulette pay table. Note that the remote player (RP) is discouraged from placing multiple/complicated wagers that a live player (LP) can place.

Card games: CARD-MATCH (TM) - simply "match" the "live player (i.e, LP #0":dealer) or associated card totals; (A) BJ/21 - BLACK-WHAMMY (TM) or EASY-JACK (TM), (B) mini-Baccarat, (C) Caribbean Stud, and (D) LET-IT-ROLL (TM). When wagering "for or against" the pay table is 1.1x, if the live player #0 wins; note that all pay tables are subject to both casino and GCB concurrence.

Slots: SLOT-MATCH (TM) - simply "match-up" with a particular live slot player on a winning streak, as per card games above. This game could have been included as a part of card games, as disclosed above, but has been separated out to emphasize its novelty. The remote player (RP) can concurrently wager on multiple (e.g., 3) live players (LP), who could be celebrities, for example, on slot machines at various locations on the casino floor. The remote station pay table can mimic that which is presented to the live player (LP), subject to casino and GCB concurrence. Note that the remote gaming station disclosed herein also supersedes the currently-deployed single and multiple game video slot gaming station in all the licensed gaming establishments including casinos, because all the functions in a video slot gaming station including multiple games, can also be implemented on the disclosed remote virtual gaming player station.

All the regulated games offered by the casino, including those noted above, can be augmented by the disclosed simple betting rules: "for or against", thereby also enabling other relatively novice players to participate in a live actual game, without all the attendant stress and embarrassment of actually sitting down at a casino table and making numerous

real-time decisions. To enable this participation at an actual table, appropriate means can be provided to enable this "second tier" of remote players to: (a) view the ongoing game using mirrors or cameras and monitors, for example, from a seat overlooking the actual live table on the casino floor, (b) collect their wagers prior to the start of the game, and (c) give them their appropriate payout at the end of the game. Note that casino player tracking or other cashless cards can be very useful in making this an efficient process in a live casino floor environment. This disclosed "second tier" gaming participation is particularly attractive to relatively novice players when the actual table has players who are either professional gamers or celebrities.

This disclosed virtual gaming system provides that each and every regulated casino game that is transacted on the live casino floor can be recorded and subsequently distributed, or immediately distributed, after appropriate compression and encryption, thereby automatically creating copyrightable video content, similar to an episode or scene in a video movie product. Currently, all casinos in states such as NV, CO, NJ, Miss., continuously record and retain gaming video material for a week to comply with surveillance regulations. The present invention provides for the reusability, repurposing, and branding of such casino generated video content. This invention provides casino games with very simple wagering rules and provides various regulatory and anti-cheating/theft measures such as encryption and watermarking. Practical distribution is facilitated using data compression. The quality of the virtual video is superior because, for example, a color image resolution of 640 x 480 pixels or better is used and the casino can also provide a 3-D perspective view of a game by utilizing multiple cameras, if required, for enhanced remote player appeal.

Moreover, a "bonus jackpot" such as, for example, cash, or consumer product (such as, for example, appliances, autos, and homes) can be displayed in this screen area 470, thereby creating additional player excitement. This bonus jackpot can move randomly, using a certified server-based RNG, amongst the various player stations on the casino floor and also include the regulated off-site locations, such as a licensed bar or other licensed route locations. Note that the remote video player does not have to have the skill level required to maintain a winning streak, such as that required, for example, in Poker. Nor does the remote player even need to understand the rules of the game. In this system, the remote video player's skill or luck occurs in selecting the specific live or pre-recorded player.

Fourth, in activity step 4A, audio is selected in the touch-sensitive subarea 510 of the video screen. Specific audio is obtained from a specific table number (T#) using a specific action button 512. General audio is a conventional casino soundtrack, unrelated to a

selected game and selected with the touch-sensitive subarea 514 of the video screen. The present invention also enables novice players to be instructed on how to play new or existing games in a relatively stress-free environment, using expert players. This virtual playing mode is more interesting than watching the currently-available instructional video tapes. The remote player stations could be put into an "instructional" mode for an hourly fee, if desired. This mode is selected using button 516 in FIG. 10, which provides the play panel video for the selected table game, an instructional audio track, and superimposed video captioning.

Fifth, in activity step 5A, a selection is made in the touch-sensitive subarea 520 of one of a number of action buttons indicating the dollar amount of a wager. This amount is consistent with the remote video player's available credit 451 and with the house wagering limits. The portion 430 of the video screen continues to show the gaming action for the selections made. In particular, the player can see whether a game is: (a) in progress 526 and no wagers can be accepted, (b) the outcome 500 of the last game: "win-or-lose" and the corresponding pay table 502, if the remote player had placed a wager, or (c) a flashing "wager now" message 528, letting the remote player know that wagers are still being accepted, prior to the start of the next virtual game.

The remote player can bet, either "for or against", the live or pre-recorded player. As a result, the skill level of the remote video player is comparable to that required of a conventional slot machine player and can be considered to be a "no-brainer". There is no unique game related decision making learning curve, anxiety, time or peer pressure associated with any game, old or new. The pay table 502 for winning a game is as per the casino published pay table, as pre-approved by GCB. One possible pay table, for this simple wagering disclosed herein, is to double the player's bet -- if the selected live player wins, that is, for a $10 bet, $20 is paid. However, if the player bets that the house-dealer (i.e., player #0) will win, then the player's payback is only "110% of the bet", that is, for a $10 bet, $11 paid if the dealer wins. A remote licensed multimedia secure player station with a such as a simple pay table and wagering decision is an important aspect of the present invention.

More complex wagering schemes are also supported by the presentation screen although these extend the simple wagering concept advanced by the present invention. More sophisticated and professional gamblers may choose to play with the usual complex wagering and playing rules, which can be activated by pushing an additional "Complex" button during the above-mentioned "second" group of remote video player actions. However, the presentation screen for each game becomes as complex as the usual live casino games. Moreover, this "complex wagering" button disclosure still contributes

several novel concepts including (a) game pre-recording/branding, (b) secure game distribution, (c) random game presentation (e.g., prevents card counting and team play, which is discouraged by NV casinos).

Sixth, in activity step 6A, a remote video player signals that he or she wishes to play in the next regulated virtual game by activating the play action button 524 in the touch-sensitive subarea 522. Subsequently, the remote video player only pushes the play action button 524 in a timely manner before the in-progress light 526 in a viewing area 528 comes on. The credit balance 451 in the response screen area 450 is automatically updated at the end of each game to display the remote video player's current credit balance.

A remote video player can stop playing and can leave the remote player station at any time by pushing a cash out action button 525 in the touch-sensitive subarea 522. The player is paid back in the same denomination and currency type that was originally inserted into the player station, to comply with the federal and state anti-laundering money laws. If the payout amount is large, then the casino can print out a coupon at the player station that can be converted to cash at the cashier's cage.

The off-site remote player station is packaged at the same security level or better than a business safe or a bank ATM machine and includes an audible alarm to make it significantly tamperproof and to satisfy the certification requirements of government gaming agencies. The touch screen is spill and shatter proof. Note that remote video player stations which are on the premises of the casino are closely monitored by casino security personnel as required by the GCB, unlike the off-site remote video player stations, which therefore need additional protection measures to be incorporated, as disclosed herein.

Slot jackpot winners typically have the opportunity to win a bonus jackpot such as a car, a vacation, and other products. The remote video player stations can also display in screen area 470 of FIG. 11, a roaming bonus jackpot that moves from station to station to thereby serve as an advertising banner similar to those typically displayed on the Internet. Since all the player stations are controlled by the gaming content distribution/communication hub (34), the jackpot can also be a progressive jackpot, either within a casino or amongst several casinos, via a virtual private network (VPN), subject to GCB approval.

FIG. 12 shows the baseline player actions and the corresponding player station responses in a logical sequence for one embodiment of a player station graphical player interface (GPI) as illustrated in FIGS. 9, 10, 11 and 12. Those skilled in the art can devise other player-friendly interaction schemes based on any other logical "action-response"

sequence that may be preferred, because of the nature of the regulated virtual games being offered or the skill level and demographics of the anticipated players. For instance, another button can be added to enable the virtual player to accelerate or slow down the time per game in the prestored mode of play. Those skilled in the art realize that cluttering up the player station with too many choices and displays will only serve to discourage the "novice" virtual player from playing.

FIG. 13 illustrates three concurrent games in the upper portion of the video response area, as might be played by an intermediate level gambler. The action and response steps are similar to those illustrated in FIGS. 9, 10, 11 and 12 for only one game. The juxtapositioning of these apparently dissimilar games, illustrates the disclosed wagering similarity between these three different games, as provided on a remote player station. Displaying the games in this manner is intended to facilitate adjustment of a player's mental frame of reference and learning curve to that of a typical relaxed slot player. A remote video player makes selections using the action buttons on the touch-sensitive screen. The system responds such that the presentation and response screen area provides a video response. A typical remote video player operates an action button on the video display console with an activity step (nA) that produces a corresponding response (nR). As illustrated in the left side of FIG. 13, an activity step (nA) produces a corresponding response step (nR).

FIG. 13 illustrates a Black Jack (BJ) game, a crap dice game, and a roulette game.

FIG. 13 illustrates an important feature of the present invention, which is that a remote virtual video player, particularly a younger one, at an intermediate skill level, can concurrently play several dissimilar games on the same gaming station; variants of this feature could be referred to as "game within a game." This type of multiple concurrent gaming is enabled by the disclosed simplicity of the wagering rules. The remote video player can virtually roam around a casino and participate in a plurality of games that are just beginning, without leaving his remote gaming station seat. The player can also purchase products and entertainment shows, while in the roaming mode, without leaving his seat.

FIG. 14 is a flowchart 600 illustrating operation of a simplified wagering-based remote gaming system according to the invention. This flowchart shows acquisition of multimedia content for a regulated casino game. The subsequent distribution and presentation processes are also shown. The upper portion of FIG. 14 shows electronic processing within a governmentally licensed and regulated casino virtual gaming control center, or distribution complex. The lower portion of FIG. 14 shows the activity on a typical play station #K used by a remote video player. FIG. 14 covers both on-site and off-

site locations for a remote video player station. On-site locations are inside the premises of a casino and are physically controlled by the casino security staff. Off-site locations are at licensed locations not physically controlled by the casino, such as, for example, bars, adult clubs, card rooms, and licensed convenience stores. An initialization block 602 in FIG. 14 shows virtual gaming system operation beginning with a system power-up, initialization, and diagnostics process for the casino virtual gaming control center.

A decision block 604 in FIG. 14 receives information to determine whether a live player has actually sat down to play at a remote play station #K. If no live player has sat down at the remote player station #K, the system as per block 606, assembles or otherwise builds a "screen saver" type of multimedia packet for transmission to the remote play station #K. At the remote play station #K, a "screen-saver" mode is activated to present periodically updated advertisements or other special offers and to "attract attention" of potential players, using, for example, special-offer ads. This process is executed for all stations: 1, ..., K, ..., N.

If a live player has sat down at the remote play station #K, then the decision block 604 terminates the "attract attention" mode and initiates the player housekeeping mode block 605 which perform various system housekeeping functions. One of these functions is tracking a player's gaming profile through communication links to a player accounting and tracking module 608. Another function is authentication of a remote video player's financial and age eligibility using, for example, biometric data recorded on disks in a disk farm 610. Block 612 illustrates another function which is monitoring of the system for maintenance and dispatching of service personnel through a maintenance dispatch server system. These functional modules 608 and 610 reside within the player accounting server 42 of FIG. 1.

A decision block 614 of FIG. 14 determines if a player has newly "logged on" at an off-site location, such as a sanctioned remote-player site connected to an authorized Internet portal 52 of FIG. 1. If the player has just logged on, a download block 616 causes a "streaming multimedia player", such as the ones from Real Video, or Microsoft or Netscape or Lucent, or equal, to be downloaded, for example, through the regulated Internet portal 52 of FIG. 1 and installed at the remote player station #K. This enables the remote video player to begin play using a stream of compressed/encrypted, video/audio multimedia gaming data, being transmitted from the casino server 34 of FIG. 1 through various types of distributed networks, including the regulated Internet 50 of FIG. 1.

A decision block 618 determines if the game to be played is live or pre-recorded. If the game is live, a certified autonomous RNG selector 620 is used to select output video and

audio signals from a live video camera 622 in response to the choice of casino game selected by the remote video player. Alternatively, an optional bypass 621 is used to directly select video and audio signals from camera 622, subject to GCB approval. If the game is pre-recorded, a certified autonomous RNG selector 624 is used to select video and audio output video signal from a multimedia video database 626, such as a secure disk, tape, CD or other storage media-based farm 96 of FIG. 1, where the virtual gaming episode data is compressed, encrypted, encapsulated and then pre-stored.

In block 628 of FIG. 14 a compressed/encrypted streaming audio/video data packet is staged for routing via one of several possible communication pathways to the remote player station #K. In the download block 630, a selected multimedia video/audio data packet or a screen saver packet from block 606, as appropriate, is sent to the remote video player station #K from the casino virtual gaming server control center 34 of FIG. 1.

The remote player station block 632 of FIG. 14 illustrates the remote video player station #K first receiving, next de-encrypting, and then de-compressing the data packet from the casino virtual gaming server control center 48 of FIG. 1. A decision block 634 illustrates an authentication check of the off-site remote video player at the beginning of each game packet and periodically, for example, every 5 seconds using the pre-stored biometrics of the player, for example. The biometric data is provided, for example, as a video camera image of the player's face or retina (e.g., Sensar), fingerprint (e.g., Digital Privacy), driver's license, credit card, signature, voiceprint (e.g., Lucent), or casino player rating/tracking ID card. If the authentication check fails at the player accounting server 42 of FIG. 1, a block 636 provides that a session termination-and-notification packet is generated and sent to the casino virtual gaming server control center 48 of FIG. 1 so that the session is immediately terminated and local security personnel are informed and dispatched via messages to the surveillance server 26 of FIG. 1 as appropriate.

If the off-site unauthorized remote video player is accessing the casino gaming facility via the authorized Internet portal 50 of FIG. 1, then it is very difficult to dispatch local security personnel to apprehend a violator in a timely manner. However, a practical remote off-site player authentication process for a casino can also require that a large (e.g., $10,000) deposit or bond be posted at a neutral financial institution (i.e., a Bank) by the player, and that the deposit or bond is forfeited, if the biometrics authentication fails. To deter violations of gaming laws, additional criminal penalties including prison time and appropriate written waivers of legal rights can also be imposed. Gaming jurisdictions typically maintain that "gaming is a privilege and not a right". Prevention of underage gaming is a significant regulatory concern and typically requires continuous, unrestricted access by the regulators to any gaming related player station at any time. A 12-foot radius,

for example, in front of the display can be monitored, using cameras and other electronic sensing means (e.g., motion detectors), to ensure that there are no underage (less than 21) individuals present, at all times. Gambling addiction is another problem that the regulated and responsible gaming community wants to curb. Continuous periodic multimedia biometrics authentication, together with bond forfeiture is disclosed as a means of meeting regulatory requirements by a casino. Biometric data can be continuously recorded at the game distribution processing complex using, for example, return path camera video, thereby enabling violations to be detected and recorded on-line and then prosecuted successfully. Continuous video taping of casino gaming areas is already required by the NV/CO/NJ State GCB. Thus, video/biometric monitoring of the remote player cannot be construed as an "invasion of privacy".

If the player is authenticated, a block 638 provides that the multimedia data stream is presented at the video display and speaker output ports of the player station #K, as per 54 and 46 in FIG. 1.

A decision block 640 of FIG. 14 illustrates monitoring of player input actions for a game when the player touches an action button on the touch-sensitive screen as per FIG. 10. Player input action requests made via a touch screen at the remote play station are continuously monitored. Block 640 tests whether a player has made a game input action or not. If a game input action has been made, a block 642 provides for assessment of that specific game input and for a local response, within 54 or 46 of FIG. 1, as appropriate, or for transmission of information to the casino virtual gaming server control center 34 of FIG. 1. If various other action button on the touch-sensitive screen are touched, the block 640 illustrates routing of that information to a block 644 which illustrates building of a command/status data packet. The block 644 also illustrates receipt of authentication failure information from the block 636.

The block 644 of FIG. 14 illustrates that the player station 54 or 46 of FIG. 1 builds an appropriate time-stamped data packet which includes current: (a) game progress/results as per FIGS. 12, 13, (b) player inputs as per FIGS. 11, 13, and (c) biometrics authentication sensor array data 374 of FIG. 1. Note the contents of this data packet are also determined by the requirements of the player accounting server 42 of FIG. 1 at the particular casino property. Block 646 shows that this packet is then compressed using, for example, PKZIP, encrypted using, for example, DES128 (as per NV-GCB) or RSA (key exchange). Recent cryptocode breaking advances indicate that the RSA key may have to be 1024 bits or larger. A block 648 illustrates a transmit request and transmission of an appropriate command/status packet for the remote video player station #K back to the virtual gaming distribution complex of the casino server control center 34 of FIG. 1.

Block 650 of FIG. 14 shows that the casino virtual gaming server control center of FIG. 1 receives and decodes the command/status packet for the remote video play station #K. The command/status information is then processed by being cycled through the processes in the casino server control center, as previously described.

Typically, all the secure communication pathways support bi-directional data packets that are asymmetric, that is, the forward path to the play station has a relatively high data rate of, for example, about 1 Mbps due to color video content. Whereas, the return path data rate is about 10 Kbps. However, the return path data rate can also be significantly greater, for example, if a video camera image of the player is continuously monitored for biometric authentication purposes.

FIG. 15 in conjunction with FIG. 1 shows an exemplary protocol implementation of an interprocessor information transfer sequence, that is initiated by the remote player, when he sits down at the remote site player station 54 of FIG. 1. Biometric sensors 124 are immediately activated to collect appropriate biometric data and transfer a biometric data packet (650) to the player (e.g., VIP) accounting server (42) of FIG. 1 via the communication server (34) of FIG. 1, at appropriate (e.g., 5 second) intervals, as noted earlier. The accounting server (42) of FIG. 1 together with the possibly co-located casino hotel reservation/VIP guest server 41 of FIG. 1 rapidly (e.g., within 5 seconds) authenticates the biometric data (650) by comparing it to prestored or other credit reference database and acknowledges the eligibility (e.g., age, credit) of the remote player (651). The authentication must be done rapidly and the newly seated player must be "entertained", for example, with the casino's daily special offer, while this is being accomplished, otherwise the player will get impatient and may walk away from the remote player station 46 or 54 of FIG. 1. If there is an eligibility failure, then an information package (652) is also forwarded to the security dispatch center via the surveillance server (26) of FIG. 1. This authentication may also include additional surveillance sensor information processing to ensure that no underage individuals are in the regulated vicinity of the remote player station 46 or 54 of FIG. 1.

Then, the remote player can roam and select a particular table (T#) and player (P#) and place a wager dollar amount, as described previously via FIGS. 9-12. FIG. 15 shows that the T#/P# information is captured by the communication server (34) of FIG. 1 to send out the appropriate randomized video/audio stream (661) and the wager information (662) is noted by the accounting server (42) of FIG. 1 to send out a wager acknowledgment signal. The duration of each card table game is typically 50 seconds, as noted earlier.

Upon completion of the playback of the randomly selected video/audio stream (661), the win or loss result packet (670) of FIG. 15 can be determined by the remote station (54) or (46) based processor (100) and/or by the communication server (34), and/or the Internet Server (50) and/or by the player accounting server (42), as engineered by those skilled in the art of FIG. 1. Note that FIG. 15 shows the implementation, wherein the win or loss result packet (670) is determined by the remote processor (100) and then reported to the player accounting server (42) via the communication server (34) and/or Internet Server (50). The display (102) of FIG. 1 is appropriately updated with the game result (671) of FIG. 15, as shown. Note that the information packets between the various server processors are typically encrypted and compressed, as shown. Moreover, the win/loss report (670) of FIG. 15 first goes all the way back to the player (e.g., VIP) accounting server (42) of FIG. 1, so that in the credit card or cashless mode of wagering, the credit balance can be appropriately updated. Similar information packet transfer diagrams can be specified and then implemented by those skilled in the art to describe the information transfer sequence, when the remote player is in the (a) roam mode prior to making a gaming related selection, or (b) roam mode associated with the casino sponsored E-commerce (38) of FIG. 1 related products and services preview, as depicted in FIG. 10.

FIG. 16 shows the activation message (680) for the E-commerce product and services (P & S) roam mode, which is forwarded to both the accounting (42) and the E-commerce server (38) of FIG. 1, via the communication server (34) or Internet server (50) of FIG. 1. The E-commerce server (38) sends the P & S video preview stream (681) of FIG. 16 back to the remote station (122) of FIG. 1. The "relaxed" remote player (12) views the streaming multimedia P & S video (2D or 3D) and makes a purchase decision (990), akin to putting an item in a virtual shopping cart. The player accounting server (42) of FIG. 1 responds with a confirmation (691) of FIG. 16 of the buy decision, including a display (102) of FIG. 1 update at the remote player station on-site (46) or off-site (54) of FIG. 1. The multicomputer architecture facilitates the remote player to continue roaming (692) or to make additional buy decisions (693) as shown in FIG. 16. Note that the biometric authentication (652) is repeated every 5 seconds, or as per GCB directives. Also the E-commerce roam mode can be viewed indefinitely (682), but the eligible remote player casino policy can limit E-commerce roam time, if required.

FIG. 17 provides a comprehensive business process functional block diagram of the disclosed multimedia virtual gaming method and system based on actual regulated casino games comprised of three main elements, namely, (a) content creation 700, (b) content distribution 800, and (c) content presentation 900.

Gaming episode package content creation 700 consists of: (a) event generation 710, (b) acquisition of a series of "raw" episodes 720, and (c) gaming episode packaging 730.

Gaming content distribution 800 consists of retrieval or staging from: (a) storage medium 810 of virtual gaming episodes or direct feed of a live episode 820, (b) random episode selection based on a GCB certified RNG 830 or bypass 821, and (c) virtual episode package distribution 840. Note that near real-time delivered live episodes not susceptible to a "sting", may or may not be randomly selected, subject to GCB approval and casino policy. Moreover, content distribution 800, particularly via the regulated Internet Server (50) of FIG. 1, must be physically located in a sovereign state or Native American territory wherein Internet gaming is legally sanctioned.

Content presentation 900 consists of a player station which provides for: (a) casino property multimedia roaming and service selection/purchase, (b) presenting the selected virtual gaming episode, and (c) player authentication, in terms of biometric and other player attributes, and (d) player participation in terms of cash or credit or cashless wagering. The physical implementation of the ATM-like tamper-proof player virtual gaming station 46 or 54 of FIG. 1 is location dependent: versions include (1) casino floor, (2) casino wall, (3) casino hotel room, (4) off-site licensed facility (e.g., restricted GCB license), such as a (a) bar, (b) mall, (c) convenience store (e.g., 7-11), (d) department store, (e) motel (lobby, rooms), and (4) GCB authorized route operator sites (e.g., diners, restaurants, truck stops). Content presentation may also have to be in a physical location wherein gaming is legally sanctioned, particularly if credit cards are used for wagering purposes by the player. Note that GCB typically limits credit card losses on a per day basis, to deter problem gambling.

Additionally, the present invention discloses economically and technically important synergistic information communication links to ancillary systems necessary to meet requirements from both the GCB and the casino, to: (a) the surveillance multimedia control system 960, (b) the player accounting and authentication system 910, (c) casino-sponsored E-commerce product-service buy/sell/convenience system (e.g., shops, shows, discount offers, services, messages, securities) 920, (d) casino-hotel reservation (VIP) system 930, (e) the security dispatch system, and (f) maintenance and diagnostics system, interconnected by secure communication pathways 750, 760, 850, and 950, as per FIG. 17.

The foregoing descriptions of generic and specific embodiments of examples of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible in light of the above teaching. The exemplary embodiments were chosen and described in order to best explain the

principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the Claims appended hereto and their equivalents.

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I CLAIM:

1. A legally-authorized virtual distributed interactive casino gaming system, comprising:

a multimedia virtual gaming content generation array presenting one or more legally-authorized live casino games played by real players in a legally-authorized gaming casino;

a multimedia virtual gaming content acquisition sensor array for sensing and for providing multimedia output signals corresponding to one or more player per sensor in each of said respective one or more legally-authorized live casino games;

a multimedia virtual gaming episode signal processing array for receiving and processing said multimedia output signals of the multimedia virtual gaming content acquisition sensor array to provide processed live and delayed multimedia output signals;

a multimedia virtual gaming content distribution array including a communication hub with a switching subsystem or distributing the processed multimedia output signals to one or more remote player stations through a bi-directional transmission medium; and

the remote player station including a multimedia display, wagering equipment, and a processor enabling a remote player to place a wager on one or more respective legally-authorized live casino games and to enable a remote player to be credited with a payout for the one or more casino game displayed on the station displays, said remote player station including means for transmitting information back to the communication hub of the multimedia virtual gaming content distribution array.

2. The legally-authorized virtual distributed interactive casino gaming system of Claim 1 including one or more legally-authorized computer-based random number generators for controlling the switching subsystem to distribute the processed multimedia output signals to the remote player station through the bi-directional transmission medium.

3. The legally-authorized virtual distributed interactive casino gaming system of Claim 2 wherein the output signal to the remote player station is comprised of a random number.

4. The legally-authorized virtual distributed interactive casino gaming system of Claim 3 wherein an encrypted random number received by the remote player station drives the appropriate video display representing the progress or outcome of the game.

5. The legally-authorized virtual distributed interactive casino gaming system of Claim 1 wherein the multimedia virtual gaming content distribution array is implemented with one or more field programmable gate arrays.

6. The legally-authorized virtual distributed interactive casino gaming system of Claim 1 wherein the multimedia virtual gaming content distribution array is implemented with one or more digital processors.

7. The legally-authorized virtual distributed casino gaming system of Claim 1 wherein the multimedia virtual gaming content acquisition sensor array includes video sensors and the remote player stations includes a video display wherein the video display does not disclose the identity of the real players in the legally-authorized live casino game.

8. The legally-authorized virtual distributed interactive casino gaming system of Claim 7 wherein the video sensor locations facilitate a clear unobscured view of each individual player's actions.

9. The legally-authorized virtual distributed casino gaming system of Claim 7 wherein the remote player station includes a head-mounted virtual video display.

10. The legally-authorized virtual distributed casino gaming system of Claim 7 wherein the remote player station is a portable terminal with a wireless communication link to the distribution array.

11. The legally-authorized virtual distributed casino gaming system of Claim 7 wherein the remote player station is a floor mounted station with a wireless communication link to the distribution array.

12. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming content acquisition sensor array provides multimedia signals from legally-authorized, restricted-access tournament games.

13. The legally-authorized virtual distributed gaming system of Claim 1 wherein the source of multimedia gaming-content signals provide legally-authorized, restricted-access, live presentations of live legally-authorized casino games using hired professional gamers and hired celebrities.

14. The legally-authorized virtual distributed gaming system of Claim 1 wherein the remote player station presents the multimedia signals to the remote player at a speed different than the speed of the live legally-authorized casino games.

15. The legally-authorized virtual distributed gaming system of Claim 14 wherein the multimedia signals are presented at a reduced speed for instruction of novice players.

16. The legally-authorized virtual distributed gaming system of Claim 1 wherein the source of multimedia gaming-content signals provide previously-recorded, legally-authorized, restricted-access, presentations of casino games.

17. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming content acquisition sensor array provides multimedia signals from legally-authorized, restricted-access games.

18. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming content acquisition sensor array provides signals obtained from legally-authorized video recordings that a casino has previously recorded on storage media for the live casino games for surveillance and other regulatory purposes.

19. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming content acquisition sensor array provides video signals for a casino to use for surveillance and other regulatory purposes.

20. The legally-authorized virtual distributed gaming system of Claim 1 wherein the bi-directional transmission medium includes a network and the multimedia virtual gaming content distribution array includes a network server connected through the network system to the remote player station.

21. The legally-authorized virtual distributed casino gaming system of Claim 1 wherein the network is a wired virtual private network.

22. The legally-authorized virtual distributed casino gaming system of Claim 1 wherein the network is a wireless virtual private network.

23. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming episode signal processing array provides synthetic computer generated and encoded video signals corresponding to live casino gaming components to the remote player station.

24. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming episode signal processing array provides data compression for the multimedia signals.

25. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming episode signal processing array provides data encryption for the multimedia signals.

26. The legally-authorized virtual distributed gaming system of Claim 1 wherein the multimedia virtual gaming episode signal processing array provides rapid editing of the content of the multimedia signals.

27. The legally-authorized virtual distributed gaming system of Claim 1 including a player authentication subsystem in the communication hub for periodic verification of a player's identity and eligibility to play.

28. The legally-authorized virtual distributed gaming system of Claim 27 including a player accounting server which provides a data repository for player authentication, player compensation, and player rating for player rewards and other casino compensation.

29. The legally-authorized virtual distributed gaming system of Claim 28 wherein a hotel reservation server provides notice of player registration to the player accounting server.

30. The legally-authorized virtual distributed gaming system of Claim 28 wherein the player accounting server provides a casino surveillance system with information pertaining to player authentication failure.

31. The legally-authorized virtual distributed gaming system of Claim 28 wherein the player authentication subsystem uses biometric information about a player to periodically authenticate that player.

32. The legally-authorized virtual distributed casino gaming system of Claim 31 wherein biometric information is obtained from a miniature camera sensor mounted within a head-mounted portion of a player station.

33. The legally-authorized virtual distributed gaming system of Claim 27 wherein the remote player station provides regulatory compliance information to the player accounting server regarding verification of the identity and age eligibility of any person within a predetermined distance from the remote player station.

34. The legally-authorized virtual distributed casino gaming system of Claim 1 wherein the legally-authorized virtual distributed casino gaming system is connected via a

virtual private network to ancillary casino systems including hotel reservation, surveillance, player accounting, and E-commerce systems.

35. A legally-authorized virtual distributed, interactive casino gaming system, comprising:

a gaming signal source providing multimedia signals corresponding to a legally-authorized live casino game;

a legally-authorized computer-based array of one or more random number generators;

a bi-directional transmission medium;

a processor array of the gaming distribution complex including a communication hub with a switching subsystem controlled by the legally-authorized computer-based random number generator for randomly distributing the multimedia signals to remote player gaming stations through the bi-directional transmission medium;

wherein the remote player gaming stations are located remotely from the gaming distribution complex and communicate with the communication hub to receive the multimedia signals, the remote player stations including multimedia displays for displaying to remote players one or more of the multimedia signals depicting a legally-authorized live casino game; and

wagering equipment at the remote player station to enable remote players to place a wager on one or more respective legally-authorized live casino games and to enable remote players to be credited with a payout for the one or more casino games displayed on the station displays.

36. The legally-authorized virtual distributed, interactive casino gaming system of Claim 35 wherein the gaming signal source provides multimedia signals corresponding to one or more real players in one or more legally-authorized live casino games played by said real players in a legally-authorized gaming casino.

37. The legally-authorized virtual distributed, interactive casino gaming system of Claim 35 wherein the gaming signal source provides multimedia signals which are processed to provide processed live and delayed multimedia output signals.

38. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the processor array is a multi-processor array with one or more servers.

39. The legally-authorized virtual distributed, interactive casino gaming system of Claim 35 wherein the multimedia virtual gaming content distribution array is implemented with one or more field programmable gate arrays.

40. The legally-authorized virtual distributed casino gaming system of Claim 39 including an accounting system server for remote players.

41. The legally-authorized virtual distributed casino gaming system of Claim 40 wherein the accounting system server provides player credit authorization and for player ratings for player rewards and casino compensation to players.

42. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the wagering equipment at the remote player station allows remote players to wager for or against a player depicted by one of the multimedia sources.

43. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the wagering equipment at the remote player station allows remote players to wager with the casino against a player depicted by one of the multimedia sources.

44. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the wagering equipment at the remote player station allows a remote player to wager on an accumulating jackpot contributed to by a number of interconnected player stations.

45. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the gaming distribution complex declares a bonus jackpot for various live casino games at various times and at various player stations.

46. The legally-authorized virtual distributed casino gaming system of Claim 35 including a remote-player authentication server in the processor array.

47. The legally-authorized virtual distributed casino gaming system of Claim 46 wherein the remote player authentication server in the processor array communicates with a governmental regulatory site which monitors compliance with governmental gaming regulations.

48. The legally-authorized virtual distributed casino gaming system of Claim 46 wherein the remote-player authentication server uses biometric information received from the remote player gaming stations.

49. The legally-authorized virtual distributed casino gaming system of Claim 48 wherein biometric information is obtained from a miniature camera sensor mounted within a head-mounted portion of a player station.

50. The legally-authorized virtual distributed casino gaming system of Claim 46 wherein the communication hub provides a connection between a remote player gaming station and an E-commerce server to facilitate E-commerce transactions by a remoter player.

51. The legally-authorized virtual distributed casino gaming system of Claim 50 wherein the E-commerce server has a mode to advertise special offers on various products and services. on a remote player station.

52. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the processor array includes a network server and the remote player gaming stations are connected through a network system to the network server.

53. The legally-authorized virtual distributed casino gaming system of Claim 52 wherein the network is a wired virtual private network.

54. The legally-authorized virtual distributed casino gaming system of Claim 52 wherein the network is a wireless virtual private network.

55. The legally-authorized virtual distributed casino gaming system of Claim 52 wherein the processing array and the remote player gaming station communicate with data packets with destination routing addresses over a network.

56. The legally-authorized virtual distributed casino gaming system of Claim 52 wherein the network system is an Internet system and the network server is an Internet server.

57. The legally-authorized virtual distributed casino gaming system of Claim 56 wherein the Internet server is located in a Native American Nation's Territory.

58. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the remote player gaming stations are located on casino gaming premises.

59. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the remote player gaming stations are located in casino premises under the physical control of the casino.

60. The legally-authorized virtual distributed casino gaming system of Claim 35 wherein the remote player gaming stations are located off of the casino premises and are not under the physical control of the casino.

61. A player gaming station for playing legally-authorized virtual distributed interactive casino games, comprising:

a legally-authorized player gaming station which receives a plurality of multimedia signals, each of which depict a corresponding legally-authorized live game played at a licensed casino, the legally-authorized player gaming station enables a player to play a corresponding legally-authorized live casino game at a site remote from the live game;

the player gaming station including a processor controlled multimedia display for presenting images to a player corresponding to the plurality of multimedia signals depicting the legally-authorized live casino games; and

wagering equipment controlled by a processor at the player gaming station which allows the player to place a wager on one or more of the respectively depicted legally-authorized live casino games and to credit the players with a payout for one or more casino games displayed on the multimedia display.

62. The player gaming station of Claim 61 wherein the multimedia display of the player gaming station includes a flat panel video display with a touchscreen area.

63. The player gaming station of Claim 62 wherein the flat panel video display is adapted to be mounted on a wall of a casino premises.

64. The player gaming station of Claim 62 wherein the flat panel video display communicates with the video distribution center with cables.

65. The player gaming station of Claim 64 wherein the flat panel video display communicates with a wireless communication link to the distribution array.

66. The player gaming station of Claim 64 wherein the cables have portions thereof routed along the lower edge of the wall of the casino premises near the floor thereof.

67. The licensed player gaming station of Claim 61 wherein the multimedia display enables a player to view images, which correspond to the plurality of multimedia signals,

sequentially and simultaneously and wherein the wagering equipment enables a player to wager on one or more of the legally-authorized live casino games.

68. The licensed player gaming station of Claim 67 wherein the network system is an Internet system and the remote-player gaming station includes a processor adapted for processing information received from and transmitted to a network Internet server.

69. The licensed player gaming station of Claim 67 wherein the Internet server is located in a Native American Nation's Territory.

70. The licensed remote player gaming station of Claim 68 wherein the gaming station includes a head-mounted assembly with a video display.

71. The licensed player gaming station of Claim 70 wherein the display is a pair of miniature CRT's.

72. The licensed player gaming station of Claim 70 wherein the display is a pair of approved eye-safe laser scanners.

73. The licensed player gaming station of Claim 70 wherein the display is a pair of LCD's.

74. The licensed remote player gaming station of Claim 70 wherein the gaming station includes a display providing a three-dimensional video presentation.

75. The licensed remote player gaming station of Claim 70 wherein the head-mounted assembly includes a head-mounted camera sensor for obtaining player retina biometric data for authentication purposes.

76. The licensed player gaming station of Claim 61 wherein said processors are microprocessors.

77. The licensed player gaming station of Claim 61 wherein said processors are field programmable gate arrays with code encryption.

78. The licensed player gaming station of Claim 61 wherein said processors are comprised of microprocessors and field programmable gate arrays with code encryption.

79. A method of distributing copyrighted video content depicting legally-authorized real casino game episodes played by real players, comprising the steps of:

generating a plurality of multimedia signals corresponding to the copyrighted, legally-authorized real casino games played by real players in a legally-authorized gaming casino; and

distributing the multimedia signals corresponding to the legally-authorized real casino games to legally-authorized players.

80. The method of Claim 79 including the step of distributing the multimedia signals using a legally-authorized computer-based random number generator to autonomously control selection of a particular multimedia signal for distribution.

81. The method of Claim 79 wherein the step of distributing the multimedia signals includes distributing multimedia signals for ongoing, live casino games.

82. The method of Claim 79 wherein the step of distributing the multimedia signals includes distributing multimedia signals for previously-recorded, legally-authorized, restricted-access, presentation of legally-authorized casino games.

83. The method of Claim 79 wherein the step of distributing the multimedia signals to legally-authorized players includes distributing to remote player stations.

84. The method of Claim 79 wherein the step of distributing the multimedia signals includes connecting the multimedia signals to a gaming distribution complex for distribution to one or more remote player station.

85. The method of Claim 79 including the step of distributing the multimedia signals through a communication hub which has a switching subsystem controlled by a licensed random number generator for distributing an autonomously randomly selected one of the plurality of multimedia signals.

86. The method of Claim 79 including the step of controlling the communication hub with a processor array.

87. The method of Claim 79 including the step of distributing the multimedia signals with a network server which is adapted to be connected to remote player gaming stations through a network system.

88. The method of Claim 87 wherein the network is a wired virtual private network.

89. The method of Claim 87 wherein the network is a wireless virtual private network.

90. The method of Claim 79 including the step of distributing the multimedia signals with an Internet server which is adapted to be connected to remote player gaming stations through an Internet server system.

91. The method of Claim 90 wherein the Internet server system is located in a Native American Nation's Territory.

92. The method of Claim 79 including the step of editing the content of the multimedia signals prior to distribution.

93. The method of Claim 79 including the step of data compressing the multimedia signals prior to distribution.

94. The method of Claim 79 including the step of data encrypting the multimedia signals prior to distribution.

95. The method of Claim 79 wherein the step of generating multimedia signals includes generating signals for presenting three-dimensional video presentations.

96. The method of Claim 79 wherein the steps of generating and distributing the multimedia signals includes generating and distributing multimedia signals corresponding to live legally-authorized, restricted-access games.

97. The method of Claim 79 wherein the steps of generating and distributing the multimedia signals includes generating and distributing live legally-authorized games played by individuals hired or invited by a casino at casino-operated entertainment gaming tables.

98. The method of Claim 79 wherein the step of distributing the multimedia signals includes distributing previously-recorded, restricted-access tournament games.

99. The method of Claim 79 wherein the step of generating multimedia signals includes obtaining signals from video recordings that a casino records on storage media for every gaming table game for surveillance and regulatory purposes.

100. The method of Claim 79 wherein the step of generating multimedia signals includes obtaining signals from video recordings that a casino records on video tapes for every gaming table game for surveillance and regulatory purposes.

101. A method of providing multimedia signals corresponding to legally-authorized virtual distributed, interactive casino games, comprising the steps of:

presenting one or more legally-authorized live casino games played by real players in a legally-authorized gaming casino;

sensing said one or more legally-authorized live casino games played by real players in a legally-authorized gaming casino with a multimedia virtual gaming content acquisition sensor array;

providing multimedia output signals corresponding to one or more players in each of said respective one or more legally-authorized live casino games; and

processing said multimedia output signals to provide processed live and delayed multimedia output signals.

102. The method of Claim 101 wherein the step of providing multimedia output signals corresponding to one or more players in each of said respective one or more legally-

authorized live casino games includes providing multimedia output signals from legally-authorized, previously-recorded, restricted-access games.

103. The method of Claim 101 wherein the step of providing multimedia output signals corresponding to one or more players in each of said respective one or more legally-authorized live casino games includes providing multimedia signals providing multimedia signals obtained from video recordings that a casino has previously recorded on storage media for table games in the casino for surveillance and other regulatory purposes.

104. The method of Claim 101 wherein the step of processing said multimedia output signals to provide processed live and delayed multimedia output signals includes the step of data compressing the multimedia signals prior to distribution.

105. The method of Claim 104 wherein the data compression means include performing image processing on the individual video frames to identify gaming components in the frame and appropriately encode said components.

106. The method of Claim 101 wherein the step of processing said multimedia output signals to provide processed live and delayed multimedia output signals includes the step of data encrypting the multimedia signals prior to distribution.

107. The method of Claim 101 wherein the step of processing said multimedia output signals to provide processed live and delayed multimedia output signals includes the step of editing the content of the multimedia signals prior to distribution.

108. The method of Claim 101 wherein the step of providing multimedia output signals includes providing video signals obtained from video recordings that a casino has previously recorded on storage media for the live casino games for surveillance and other regulatory purposes.

109. The method of Claim 101 wherein the step of providing multimedia output signals includes providing video signals for a casino to use for surveillance and other regulatory purposes.

110. A method of enabling a remote player to wager on a legally-authorized and regulated real casino games played in a legally-authorized manner by one or more real players, comprising the steps of:

the remote video player inserting an acceptable form of payment in an acceptor-validator subsystem at a remote player gaming station to establish the remote video player's creditworthiness and age eligibility to wager;

if the remote video player is creditworthy and age eligible, presenting on a presentation and response screen area of the remote player station the remote video player's current credit balance;

the creditworthy and age-eligible remote video player choosing a casino activity previewed on the presentation and response screen;

presenting on the presentation and response screen an appropriate live or pre-recorded multimedia video episode package corresponding to one or more of said legally-authorized and regulated real casino games;

the remote video player selecting a predetermined play mode by touching one of a plurality of action buttons in a touch-sensitive subarea of the presentation and response screen area of the remote player gaming station;

presenting a game having the predetermined play mode on the response screen area of the player station and presenting a table number and a player number for a real player selected in a response screen area;

the remote video player selecting the dollar amount of a wager; and

the remote video player signaling that he or she wishes to play the next game by activating the a play action button in the touch-sensitive subarea of the presentation and response screen.

111. The method of Claim 110 wherein the step of presenting on the presentation and response screen an appropriate live or pre-recorded multimedia video gaming episode package corresponding to one or more of said legally-authorized and regulated real casino games includes distributing a processed multimedia output signals to the remote player station through a bi-directional transmission medium using a legally-authorized computer-based random number generator for controlling a switching selection system.

112. A packaging system for encapsulating a gaming episode in a legally-authorized virtual distributed interactive casino gaming system, comprising:

a multimedia virtual gaming content generation array presenting one or more legally-authorized live casino games played by real players in a legally-authorized gaming casino;

a multimedia virtual gaming content acquisition sensor array for sensing and for providing multimedia output signals corresponding to one or more player per sensor in each of said respective one or more legally-authorized live casino games;

a multimedia virtual gaming episode signal processing array for receiving and processing said multimedia output signals of the multimedia virtual gaming content acquisition sensor array to provide processed live and delayed multimedia output signals; and

recording the processed live and delayed multimedia output signals on a recording media.

113. A method of wagering on a virtual gaming episode of a legally-authorized virtual distributed interactive casino gaming system, comprising the steps of:

generating multimedia signals corresponding to legally-authorized real casino games played by real players in a legally-authorized gaming casino;

distributing the multimedia signals corresponding to the legally-authorized real casino games to licensed users at remote player gaming stations having wagering equipment enabling remote players to place a wager for or against a selected real player depicted by the multimedia signals corresponding to legally-authorized real casino games played by real players in a legally-authorized gaming casino.

114. The method of wagering on a virtual gaming episode of a legally-authorized virtual distributed interactive casino gaming system of Claim 113 including the step of enabling remote players to place a wager with the casino and against a player depicted by one of the multimedia sources.

115. The method of wagering on a virtual gaming episode of a legally-authorized virtual distributed interactive casino gaming system of Claim 114 wherein the wager is placed on any existing casino game including video wagering games.

116. The method of wagering on a virtual gaming episode of a legally-authorized virtual distributed interactive casino gaming system of Claim 114 wherein the wager is placed on a real player playing a legally-authorized casino game.

117. The method of wagering on a virtual gaming episode of a legally-authorized virtual distributed interactive casino gaming system of Claim 114 wherein the wager is placed on a simplified version of a conventional casino game.

118. The method of wagering on a virtual gaming episode of a legally-authorized virtual distributed interactive gaming system of Claim 114 wherein the wager is placed on a real player participating in any game of skill.

119. The method of wagering on a virtual gaming episode of a legally-authorized virtual distributed interactive casino gaming system of Claim 114 wherein the wager is placed on a real player participating in any game of chance.

120. A method of simplified wagering on regulated games presented by a casino, comprising the steps of:

generating a live game with real players;

providing a remote player with a presentation of a live game;

the secondary players placing bets for or against one or more of the real players;

collecting wagers from the remote player prior to the start of the live game;

completing play of the live game; and

paying the secondary player appropriately for their wager on the one or more real players.

121. The method of Claim 120, wherein the step of providing the remote player with the presentation of the live game includes providing the presentation using one or more mirrors.

122. The method of Claim 120, wherein the steps of providing the remote player with the presentation of the live game includes providing the presentation using a video camera and a video monitor.

123. The method of Claim 120, wherein the steps of providing the remote player with the presentation of the live game includes providing the presentation by direct viewing by the remote players.

124. A method of disseminating a multi-episode session of prerecorded episodes, comprising the steps of: storing a plurality of pre-recorded individually identifiable episodes in an episode database; randomly retrieving one or more of the plurality of pre-recorded episodes from the episode data base to provide said session, wherein the random retrieval occurs with a predetermined correlation.

125. The method of claim 124 wherein the step of retrieving said pre-recorded episode includes pseudo-randomly selecting pre-recorded multimedia gaming episodes, wherein each pre-recorded multimedia gaming episode includes participating entities with corresponding gaming outcomes associated therewith.

126. The method of claim 125 wherein the step of pseudo-randomly selecting includes pseudo-randomly selecting pre-recorded audio-video gaming episodes and sequentially numbering all of the E audio-visual gaming episodes and selecting L of the audio-visual episodes with an array of L random number generators, to provide a multi-episode session.

127. The method of Claim 124 wherein the step of randomly selecting one or more of the pre-recorded E episodes includes autonomously generating random numbers with an array of L random number generators, each having a pre-determined auto-correlation and a predetermined cross-correlation.

128. The method of Claim 125 including editing the pre-recorded multi-media gaming episodes to highlight and annotate entity activity and outcome in each episode, minimize episode duration, and minimize episode data base storage.

129. The method of Claim 125 includes encrypting the prerecorded multi-media gaming episodes to prevent episode outcome tampering, deter unauthorized playback, and provide anti-copying protection.

130. The method of Claim 125 including compresses the pre-recorded multi-media gaming episodes to minimize database storage and to minimize episode communication bandwidth needed.

131. The method of Claim 124 wherein the step of storing the plurality of pre-recorded episodes in the episode database includes storing audio-video gaming episodes that are selected from a group consisting of: discrete-finite-random-number-array generated fictional storyline episodes with an array of N entities, abstract-life episodes with an array of N entities, or real-life episodes with an array of N proxy participant entities, wherein N is one or more discrete entities, each providing one of M discrete outcomes in each of said episodes.

132. The method of Claim 131 wherein the abstract-life episodes include N graphically animated character entities, selected from a group consisting of: 2 dimensional character entities, or 3 dimensional character entities, each providing one of M discrete goal-oriented outcomes in each of said episodes.

133. The method of Claim 131 wherein the real-life episodes are selected from the group consisting of: games of chance, games of skill, or both, that are played by one or more proxy participants that are selected from a group consisting of: human participants or non-human participants on premises that are selected from a group consisting of: indoor facilities or outdoor facilities, or both.

134. The method of Claim 131 wherein the origin of the real-life episodes is at one or more premises, selected from a group consisting of: live casino floor gaming, casino surveillance recording facilities, casino invitation-only tournaments, open gaming contests, televised gaming events, or staged video recording studio events by any combination of one or more proxy participants, wherein the proxy participants are selected from a group consisting of: gaming professionals, entertainment celebrities, or other gaming participants.

135. The method of Claim 124 wherein the step of storing includes storing the episode database on one or more random retrieval media that is selected from a group consisting of: solid-state memories, optical memories, magnetic memories, VCDs, DVDs, Hard disks, ROMs, Jukebox array, video tapes, Flash ROMs, or memory sticks.

136. The method of Claim 125 including the step of session scoring wherein an additive credit for each winning outcome wager selected and a subtractive credit for each losing outcome wager selected are accumulated in accordance with a simplified version of odds for an outcome-paytable.

137. The method of Claim 124 includes the step of using a random number generator that has a discrete probability distribution that is selected from a group consisting of: a probability distribution with a probability of 1 / E or another probabilistically consistent

weighted distribution for retrieving any one episode from an episode data base of E episodes.

138. The method of Claim 126 including retrieval of each of the E prestored episodes in the episode database based on an episode replacement and removal policy that is selected from the group consisting of: use each episode only once until all episodes have been retrieved at least once, no episode removal, or another combinationally consistent policy.

139. The method of Claim 125 including the step of providing outcome-payable win odds for outcome scoring each episode in the database and for each entity in each episode which odds are arbitrarily predefined and pre-published as a statistically consistent outcome-paytable win odds schema.

140. The method of Claim 126 including the step of scoring the outcome of a session by invoking a jackpot paytable generator selected from a group consisting of: pre-published or random, to score a jackpot win, if said session is selected from a group consisting of: a plurality of concurrently wagered winning episodes, or a plurality of winning outcome entities in said episode in said session, to score said session jackpot and provide an additional win credit for the session.

141. The method of Claim 139 including displaying final accumulated credit ranking of top R players for a plurality of sequential sessions on a particular player terminal.

142. The method of Claim 125 wherein said retrieving of said episodes is deterministically correlated pseudo-random with removal of an episode from the database after retrieval for an educational playback mode.

143. The method of Claim 124 including disseminating prerecorded episodes with one or more electronic components selected from a group consisting of: a field programmable gate array (FPGA), an application specific integrated circuit (ASIC), a gate array, or a microprocessor.

144. The method of Claim 127 including the step of providing a player terminal which is mechanically and electronically secure and tamperproof to preclude unauthorized modification of an internal autonomous legally certified array of random number generators used for episode retrieval, to preclude an external sensor-based prediction of the episode outcome, and to preclude disabling of an audio-visual alarm mechanisms

145. The method of Claim 136 including the step of pre-publishing the valuation of a unit of credit that is selected from a group consisting of: cash value, redeemable product/ service coupon value, or no value whatsoever.

146. A player episode session dissemination system, comprising: a database containing a plurality of individually identifiable prerecorded E episodes, and an autonomous random retrieval mechanism with a predetermined statistically auto-correlated random retrieval playback mechanism for a viewing session that includes one or more episodes from said database.

147. The player episode dissemination system of Claim 146 wherein all the E episodes are sequentially numbered and wherein the random retrieval playback mechanism includes an array of L random number generators with a predetermined cross-correlation for selecting L of the numbered episodes that comprise a multi-episode session.

148. The player episode dissemination system of Claim 146 wherein the episodes comprise entities with pre-determined outcomes that are retrieved from the group consisting of: real-life episodes of N proxy participant entities with one of M distinct corresponding outcomes, abstract-life episodes of N graphically animated character entities with one of M distinct corresponding outcomes, or computer-random-number-array-generated fictional gaming episodes of N fictional entities with one of M distinct corresponding outcomes.

149. The player episode dissemination system of Claim 148, including:
a wagering schema, wherein credits are wagered by the player on: one of M distinct possible outcome values for each of said entities in each of L concurrent episodes.

150. The player episode dissemination system of Claim 149 including a scoring mechanism for scoring the wagered credits via a player pre-determined outcome-paytable win odds to provide a resulting player credit gain and player credit balance.

151. The player episode dissemination system of Claim 149 wherein M is one of three possible outcomes including winning, drawing, and losing for each of the selected real-life proxy participants.

152. The player episode dissemination system of Claim 148 including processing modules wherein the prerecorded episodes are first recorded as raw episodes and subjected to one or more processing functions that are selected from the group consisting of: multimedia editing, annotating, compressing and encrypting, prior to inclusion into said prerecorded media dissemination database wherein said processing modules are selected

from the group consisting of: video production equipment, audio production equipment, and postproduction equipment.

153. The episode dissemination system of Claim 148 wherein the episode database comprising real-life game episodes are selected from a group consisting of: games of chance, games of skill, or both, played by entities wherein the entities are selected from a group consisting of one or more proxy participants, selected from a group consisting of: humans or non-humans, on premises selected from a group consisting of: indoor or outdoor facilities.

154. The episode dissemination system of Claim 146 wherein the real-life episodes are played on premises that are selected from a group consisting of: casino floor, invitation-only tournaments, open contests, televised events, or video recording studio by any combination of proxy participants that are selected from a group consisting of: gaming professionals, celebrities, comedians, amateurs, or other gaming participants.

155. The episode dissemination system of Claim 146 wherein the database is stored on a media that is selected from a group consisting of a non- removable media or a media that is removable and that is selected from a group consisting of: solid state memory, optical memory, magnetic memory, bionic memory,VCD, DVD, disk, ROM, Jukebox array,video tape, Flash ROM , memory stick.

156. The episode dissemination system of Claim 150 including a display device that, upon activation, displays the current player credit, balance, and wager choices, and currently accumulated multi-game and multi-entity bonus credit Jackpot, as per said outcome-paytable win odds,

157. The episode dissemination system of Claim 156 wherein the wagering choices are enabled by a wagering mechanism that accepts wagers of a desired number of credits on the gaming outcome of each of the selected proxy participants in each of the episodes.

158. The episode dissemination system of Claim 157 wherein the wagering mechanism accepts wagers of a desired number of credits on the outcome of each of the selected proxy participants on the outcome of random variables in the plurality of randomly selected episodes.

159. The episode dissemination system of Claim 156 wherein the display device plays back all the selected concurrent gaming episodes and the resulting outcome credit.

160. The episode dissemination system of Claim 150 wherein the scoring mechanism includes a game episode outcome scoring mechanism that assigns an additive credit for each winning entity wager selected, and that assigns a subtractive credit for each losing entity wager selected, as per the pre-published simplified version of said outcome-paytable win odds.

161. The episode dissemination system of Claim 146 wherein the autonomous random retrieval playback mechanism for an episode data base of E entries includes a random number generator for retrieving any one episode that has a discrete probability distribution, selected from a group consisting of: uniform with a probability of 1 / E, or any other probabilistically consistent weighted distribution, for retrieving any one episode.

162. The episode dissemination system of Claim 147 wherein the random retrieval mechanism retrieves each of the L episodes from the database, based on an episode and entity replacement / removal policy that is selected from the group consisting of: use each episode only once until all episodes have been retrieved at least once, no episode removal, or any other combinationally consistent policy.

163. The episode dissemination system of Claim 150 wherein outcome-paytable win odds for each episode in the database and for each entity in each episode are arbitrarily predefined and prepublished as an outcome-paytable win odds schema, selected from a group consisting of: virtual wheel slot-like odds, card game-like odds, or any statistically consistent odds.

164. The episode dissemination system of Claim 147 including a mechanism for scoring the outcome of a session by invoking a jackpot paytable generator selected from a group consisting of: a prepublished jackpot paytable generator or a random jackpot paytable generator to score a jackpot win, if said session is selected from a group consisting of: a plurality of winning concurrently wagered episodes, or a plurality of winning outcome entities in said episodes in said session, to score and display an additional multi-episode / multi-entity bonus Jackpot win credit for said session.

165. The episode dissemination system of Claim 156 wherein the display device, upon player activation, displays a final accumulated credit ranking of the top R players for a plurality of successive sessions on said system.

166. The episode dissemination system of Claim 146 wherein retrieval of said episodes includes a deterministically pseudo-random retrieval mechanism with a database episode removal-after-retrieval policy, for an educational playback mode.

167. The episode dissemination terminal system of Claim 146 which is implemented using one or more electronic components selected from a group consisting of: a field programmable gate array (FPGA), an application specific integrated circuit (ASIC), a gate array, or a microprocessor.

168. The player episode dissemination system of Claim 147 including a display device and wherein the entire system is mechanically and electronically secure and tamperproof, to preclude any unauthorized modification of the of random number generators prediction of an episode outcome by external sensors, and to preclude disabling of an audio-visual alarm mechanism incorporated in said system.

169. The player episode dissemination system of Claim 168 wherein the display device includes a mechanism for pre-publication of the valuation of a unit of credit, selected from a group consisting of: cash value, redeemable coupon value, or no value whatsoever.

170. The player episode dissemination system of Claim 169 including a redeemable coupon that can be exchanged by a player for a choice of items selected from products and services as designated in said outcome-paytable win odds.

171. The player episode dissemination system of Claim 168 wherein the display device incorporates access control security devices, thereby making it viewable only by individuals who are pre-authorized adults with an adequate credit balance.

172. The episode dissemination system of Claim 168 wherein the display device is located inside a licensed adult-only facility, selected from a group consisting of: an alcohol bar, a smoking bar, or another facility licensed for deployment of a gaming episode dissemination terminal apparatus.

173. The episode dissemination system of Claim 168 wherein the display device is head-mounted to enable exclusive audio-video viewing, selected from a group consisting of: 2 dimensional, or 3 dimensional, by only one pre-authorized individual adult at a time.

174. The episode dissemination system of Claim 168 wherein one or more measurement generating sensors are provided that are selected from the group consisting of: a finger-print, an eyeball-print, a voice-print, or a face-print, that are used to ensure restricted access security to only enable pre-authorized adult individuals to operate said system.

175. The episode dissemination system of Claim 168 wherein the players credit eligibility and balance is verified using one or more removable devices inserted by the player into said system selected from a group consisting of: a credit card, a smart card, legal coins, or legal paper currency.

176. The episode dissemination system of Claim 169 including pre-published outcome-paytable win odds for single and multiple concurrent are subject to regulatory approval, when the unit of credit has value.

177. The episode dissemination system of Claim 146 further including a multi-system interconnect topology, connected via a secure bi-directional communication link to an external host computer in which an array of at least P x Sum L(P) independent autonomous legally certified array of pre-determined auto-correlated random number generators with a pre-determined cross-correlation resides, thereby enabling a secure external random number array based retrieval mechanism for the retrieval of L(P) episodes in each of the P player gaming episode terminals from each of E episode local database residing in each of said P systems..

178. The episode dissemination system of Claim 177 including a real-time processor of sensor data communication from each of the P player episode terminals to the external host computer to enable player ID authentication and credit authorization response to be periodically communicated in real-time to each of the P player episode terminals, thereby enabling legally regulated gaming including a cumulative Jackpot to be conducted on a player episode terminals located in geographically distributed licensed premises.

179. The episode dissemination system of claim 178 wherein said external host computer maintains an identical master copy of the episode database residing on each of said P episode terminals.

180. The episode system of claim 177 wherein said communication link has one or more protocols which are one or more selected from the group consisting of: Internet, Virtual Private Network, or Ethernet and has connectivity media which are one or more selected from the group consisting of: metal, fiber-optic, or wireless.

181. The system of claim 178 wherein said external host computer is located in one or more jurisdictions with legalized cash based gaming selected from the group consisting of: Native American territory, State of Nevada, State of New Jersey, State of Mississippi, State of Colorado, any sovereign nation, International land-sea-air-space jurisdiction.

182. The system of claim 178 wherein the external host computer maintains an accounting and credit verification system to manage the credit balance of all the pre-authorized players and any collections and disbursements therefrom.

183. A method of disseminating gaming sessions on a secure computer, comprising the steps of:

(a) initiating each session by invoking an autonomous certified random retrieval of one or more gaming episodes from a prerecorded casino certified and branded gaming surveillance database;

(b) wagering credits on the outcome selected from the group consisting of: win, lose, or draw, for each of one or more of the proxy participants in each of the concurrent gaming episodes on the basis of pre-disclosed outcome-paytable win odds;

(c) scoring the session credit gain and accumulated credit balance resulting from the actual outcome of all the subsequently playback viewable retrieved said gaming episodes; and scoring an additional pre-disclosed jackpot win credit, if there is a plurality of wagered wins on said proxy participants in said concurrent gaming episodes.

(d) outcome-paytable win odds for single and multiple concurrent games of claim 18 are subject to regulatory approval, when the unit of credit has value, as per claim 24.

(e) repeating steps (a) through (d).

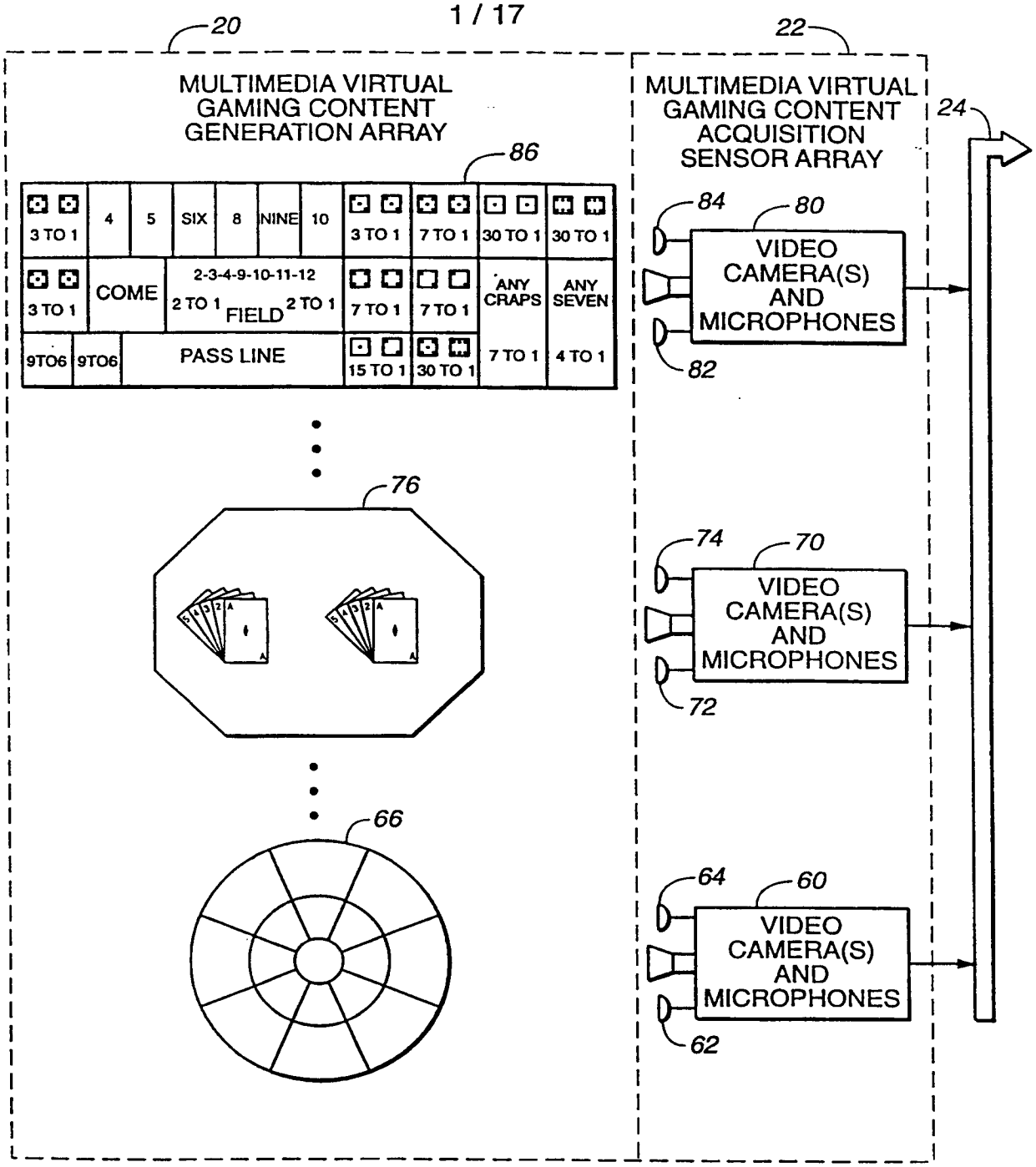
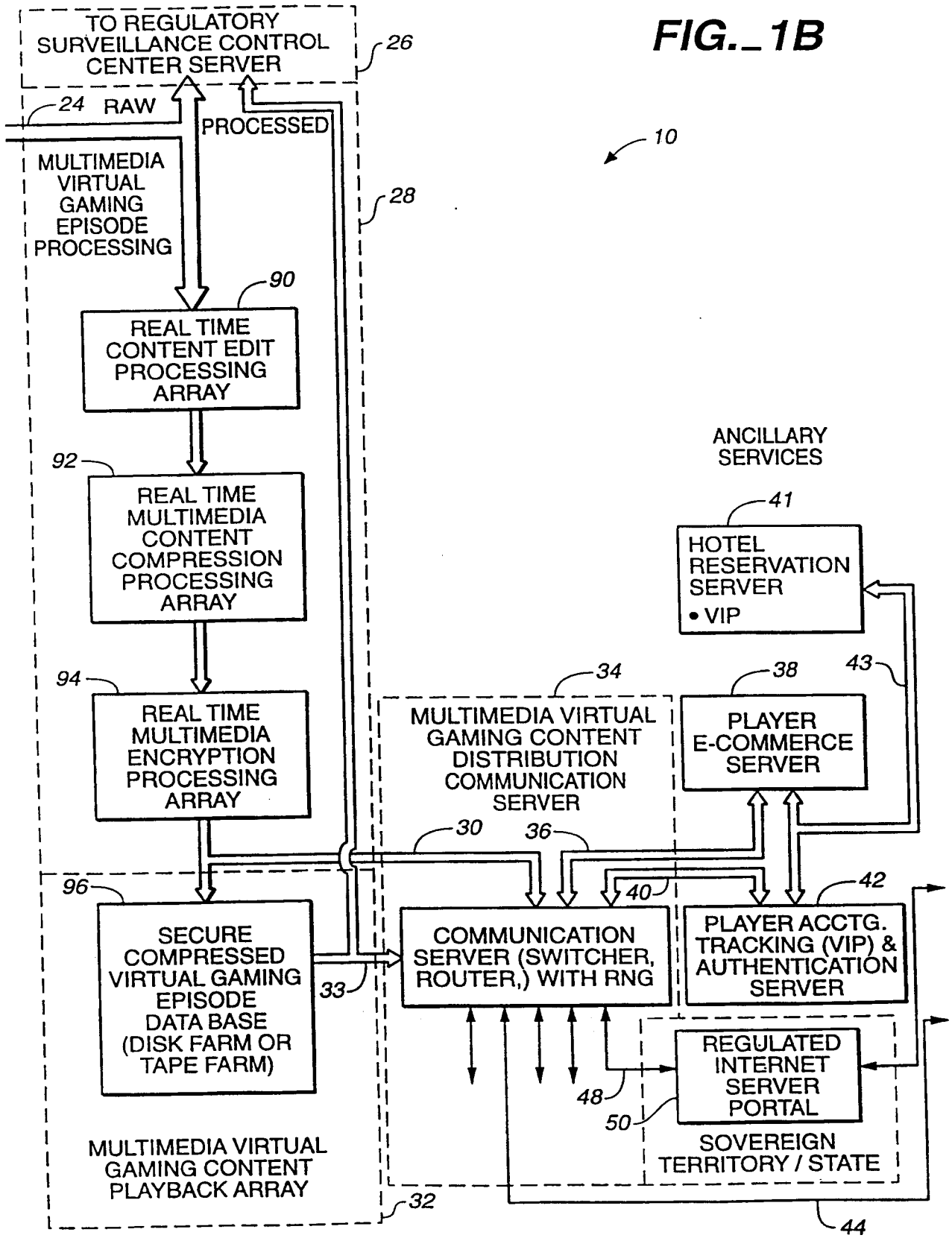

20
MULTIMEDIA VIRTUAL GAMING CONTENT GENERATION ARRAY
86
3 TO 1
4
5
SIX
8
NINE
10
3 TO 1
7 TO 1
30 TO 1
30 TO 1
3 TO 1
COME
2-3-4-9-10-11-12
2 TO 1
FIELD
2 TO 1
7 TO 1
7 TO 1
ANY CRAPS
ANY SEVEN
9TO6
9TO6
PASS LINE
15 TO 1
30 TO 1
7 TO 1
4 TO 1
76
66
22
MULTIMEDIA VIRTUAL GAMING CONTENT ACQUISITION SENSOR ARRAY
24
84
80
VIDEO CAMERA(S) AND MICROPHONES
82
74
70
VIDEO CAMERA(S) AND MICROPHONES
72
64
60
VIDEO CAMERA(S) AND MICROPHONES
62

FIG._1A

FIG._1B


TO REGULATORY SURVEILLANCE CONTROL CENTER SERVER
26
24 RAW
PROCESSED
10
MULTIMEDIA VIRTUAL GAMING EPISODE PROCESSING
28
90
REAL TIME CONTENT EDIT PROCESSING ARRAY
92
REAL TIME MULTIMEDIA CONTENT COMPRESSION PROCESSING ARRAY
94
REAL TIME MULTIMEDIA ENCRYPTION PROCESSING ARRAY
ANCILLARY SERVICES
41
HOTEL RESERVATION SERVER
• VIP
43
34
MULTIMEDIA VIRTUAL GAMING CONTENT DISTRIBUTION COMMUNICATION SERVER
38
PLAYER E-COMMERCE SERVER
30
36
40
42
96
SECURE COMPRESSED VIRTUAL GAMING EPISODE DATA BASE (DISK FARM OR TAPE FARM)
33
COMMUNICATION SERVER (SWITCHER, ROUTER,) WITH RNG
PLAYER ACCTG. TRACKING (VIP) & AUTHENTICATION SERVER
REGULATED INTERNET SERVER PORTAL
48
50
SOVEREIGN TERRITORY / STATE
MULTIMEDIA VIRTUAL GAMING CONTENT PLAYBACK ARRAY
32
44

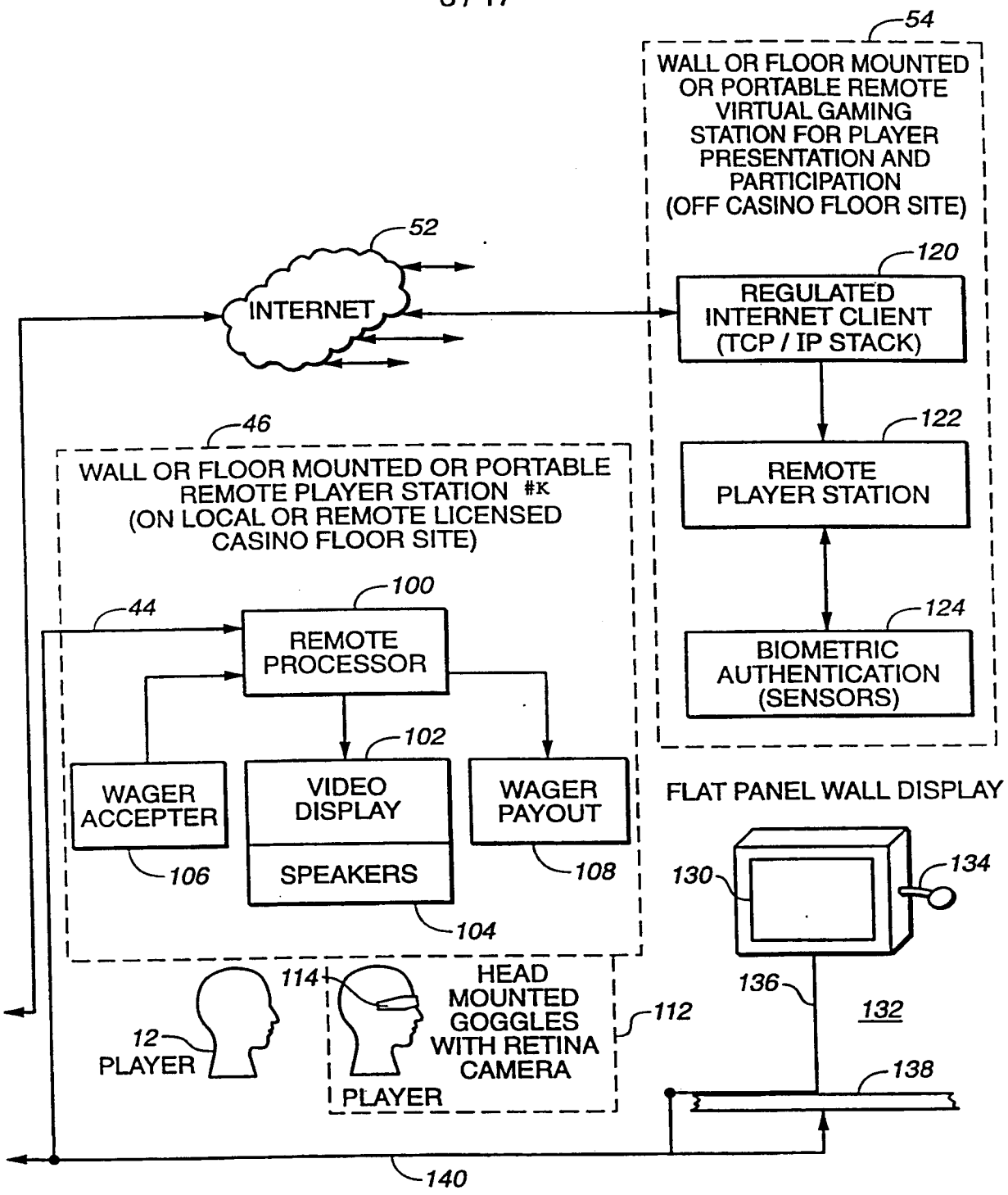

54
WALL OR FLOOR MOUNTED OR PORTABLE REMOTE VIRTUAL GAMING STATION FOR PLAYER PRESENTATION AND PARTICIPATION (OFF CASINO FLOOR SITE)
52
INTERNET
120
REGULATED INTERNET CLIENT (TCP / IP STACK)
122
REMOTE PLAYER STATION
124
BIOMETRIC AUTHENTICATION (SENSORS)
46
WALL OR FLOOR MOUNTED OR PORTABLE REMOTE PLAYER STATION #K (ON LOCAL OR REMOTE LICENSED CASINO FLOOR SITE)
44
100
REMOTE PROCESSOR
102
WAGER ACCEPTER
106
VIDEO DISPLAY
SPEAKERS
104
WAGER PAYOUT
108
FLAT PANEL WALL DISPLAY
130
134
136
132
138
114
HEAD MOUNTED GOGGLES WITH RETINA CAMERA
112
12
PLAYER
PLAYER
140

FIG._1C

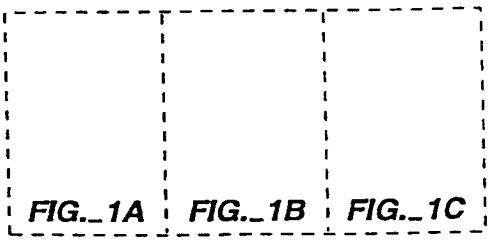


FIG._1A
FIG._1B
FIG._1C

FIG._1

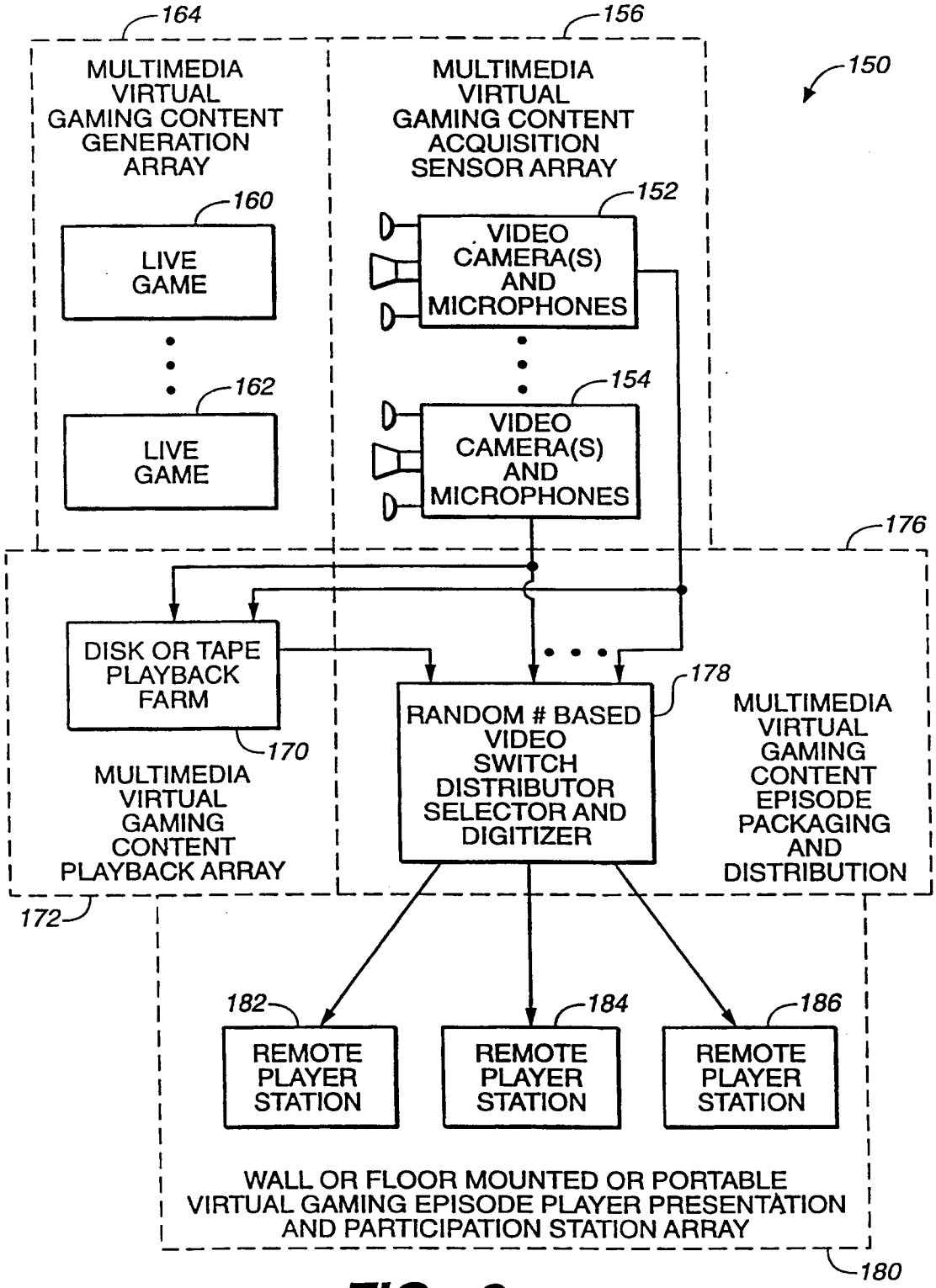

164
156
150
MULTIMEDIA VIRTUAL GAMING CONTENT GENERATION ARRAY
MULTIMEDIA VIRTUAL GAMING CONTENT ACQUISITION SENSOR ARRAY
160
LIVE GAME
162
LIVE GAME
152
VIDEO CAMERA(S) AND MICROPHONES
154
VIDEO CAMERA(S) AND MICROPHONES
176
DISK OR TAPE PLAYBACK FARM
170
MULTIMEDIA VIRTUAL GAMING CONTENT PLAYBACK ARRAY
178
RANDOM # BASED VIDEO SWITCH DISTRIBUTOR SELECTOR AND DIGITIZER
MULTIMEDIA VIRTUAL GAMING CONTENT EPISODE PACKAGING AND DISTRIBUTION
172
182
184
186
REMOTE PLAYER STATION
REMOTE PLAYER STATION
REMOTE PLAYER STATION
WALL OR FLOOR MOUNTED OR PORTABLE VIRTUAL GAMING EPISODE PLAYER PRESENTATION AND PARTICIPATION STATION ARRAY
180

FIG._2

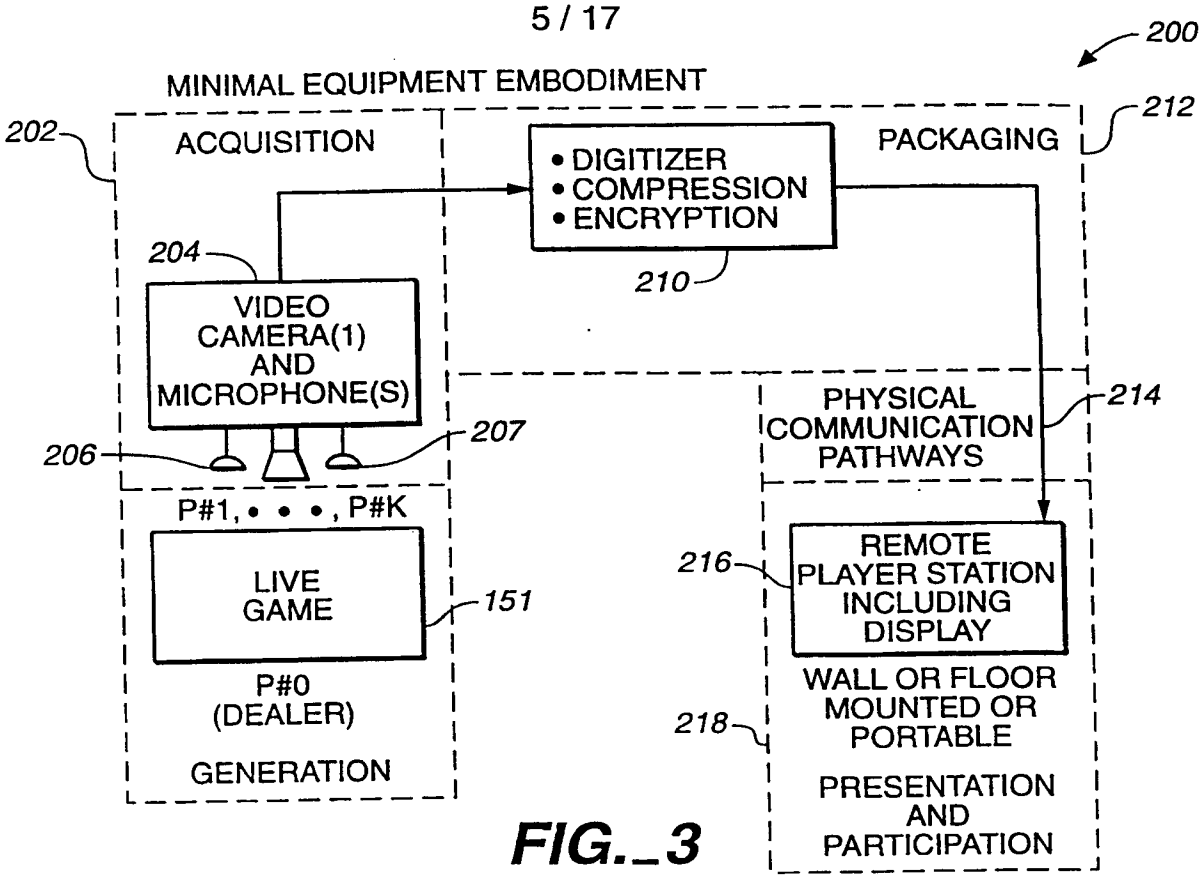


FIG._3

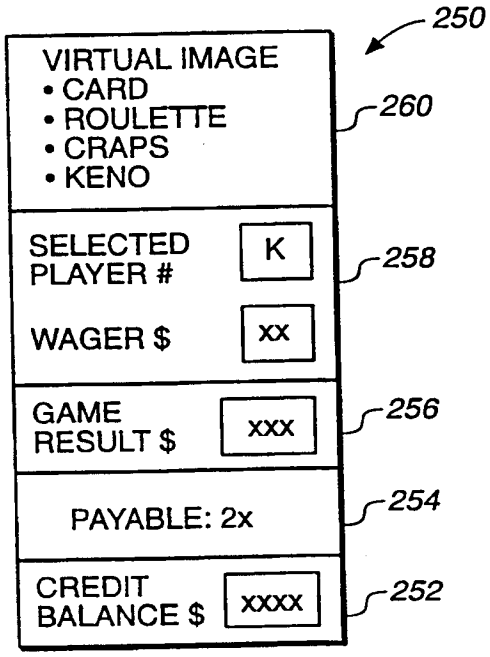
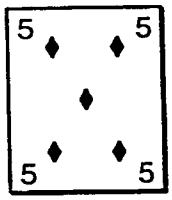


FIG._4



SYNTHETIC CARD ENABLING BINARY ENCODING (e.g., 010110) AFTER RECOGNITION PROCESSING

FIG._6

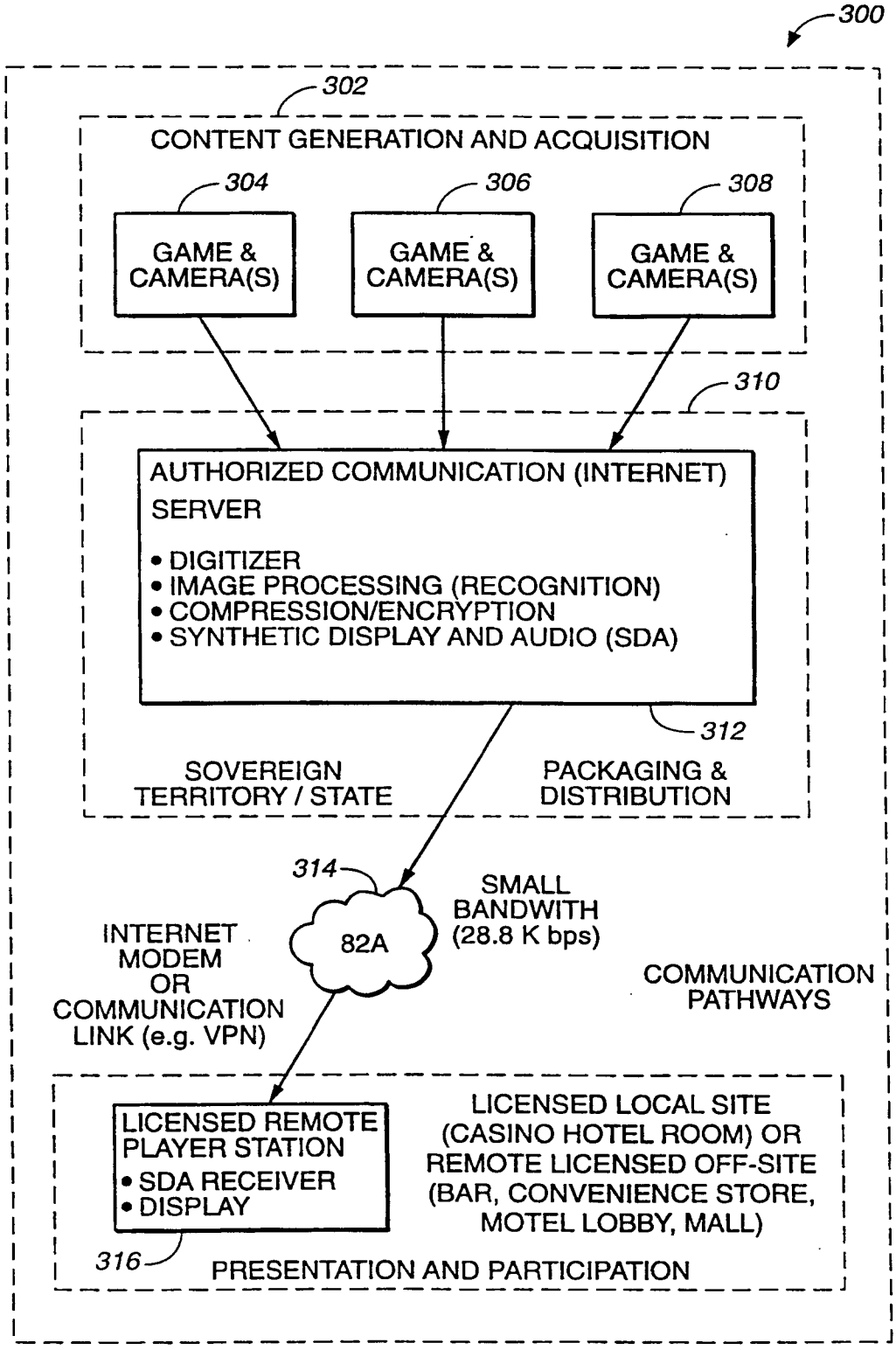

300
302
CONTENT GENERATION AND ACQUISITION
304
306
308
GAME & CAMERA(S)
GAME & CAMERA(S)
GAME & CAMERA(S)
310
AUTHORIZED COMMUNICATION (INTERNET) SERVER
• DIGITIZER
• IMAGE PROCESSING (RECOGNITION)
• COMPRESSION/ENCRYPTION
• SYNTHETIC DISPLAY AND AUDIO (SDA)
312
SOVEREIGN TERRITORY / STATE
PACKAGING & DISTRIBUTION
314
82A
SMALL BANDWITH (28.8 K bps)
INTERNET MODEM OR COMMUNICATION LINK (e.g. VPN)
COMMUNICATION PATHWAYS
LICENSED REMOTE PLAYER STATION
• SDA RECEIVER
• DISPLAY
LICENSED LOCAL SITE (CASINO HOTEL ROOM) OR REMOTE LICENSED OFF-SITE (BAR, CONVENIENCE STORE, MOTEL LOBBY, MALL)
316
PRESENTATION AND PARTICIPATION

FIG._5

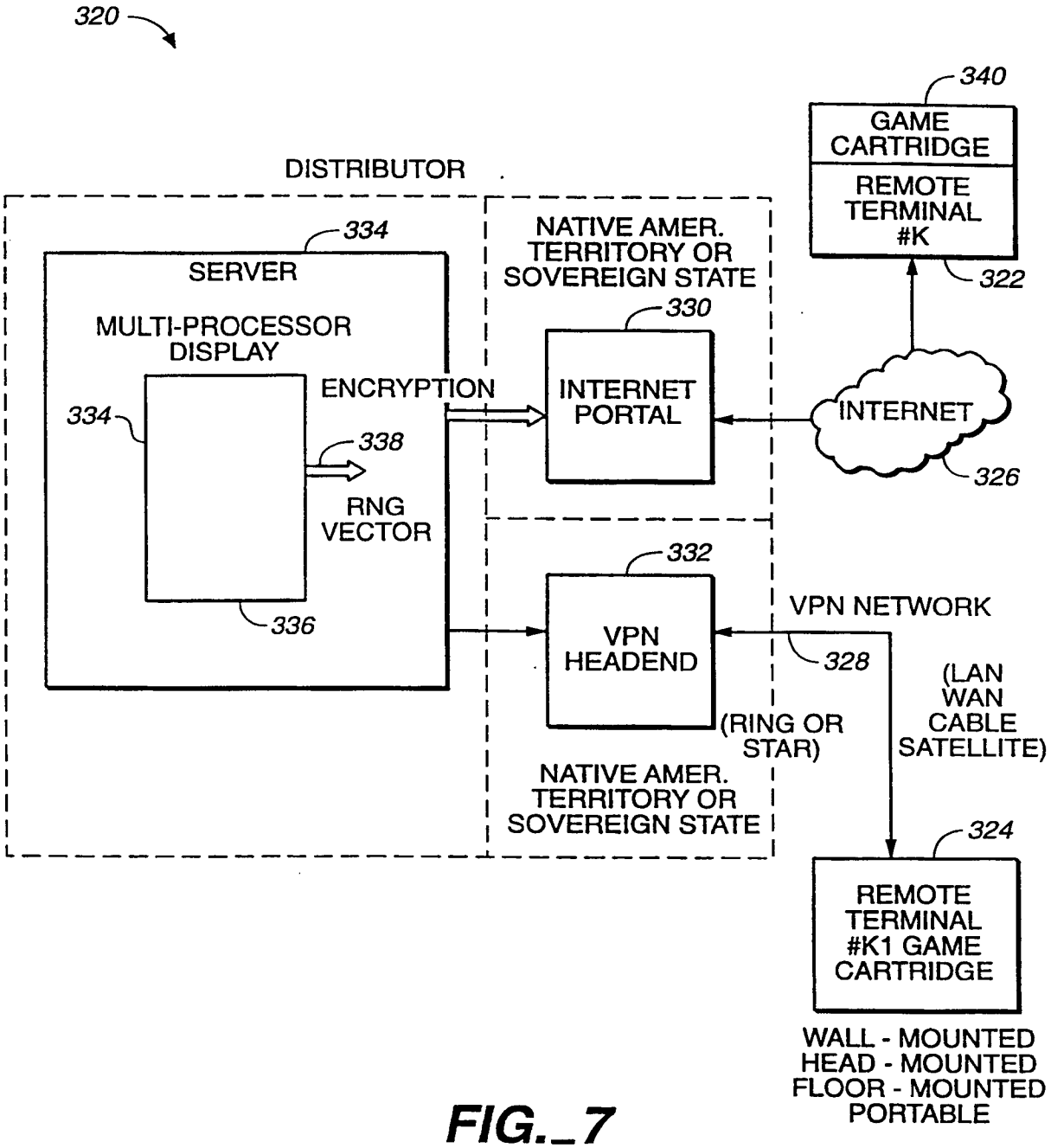

320
340
GAME CARTRIDGE
REMOTE TERMINAL #K
322
DISTRIBUTOR
NATIVE AMER. TERRITORY OR SOVEREIGN STATE
334
SERVER
MULTI-PROCESSOR DISPLAY
330
INTERNET PORTAL
INTERNET
326
ENCRYPTION
334
338
RNG VECTOR
336
332
VPN HEADEND
VPN NETWORK
328
(LAN WAN CABLE SATELLITE)
(RING OR STAR)
NATIVE AMER. TERRITORY OR SOVEREIGN STATE
324
REMOTE TERMINAL #K1 GAME CARTRIDGE
WALL - MOUNTED
HEAD - MOUNTED
FLOOR - MOUNTED
PORTABLE

FIG._7

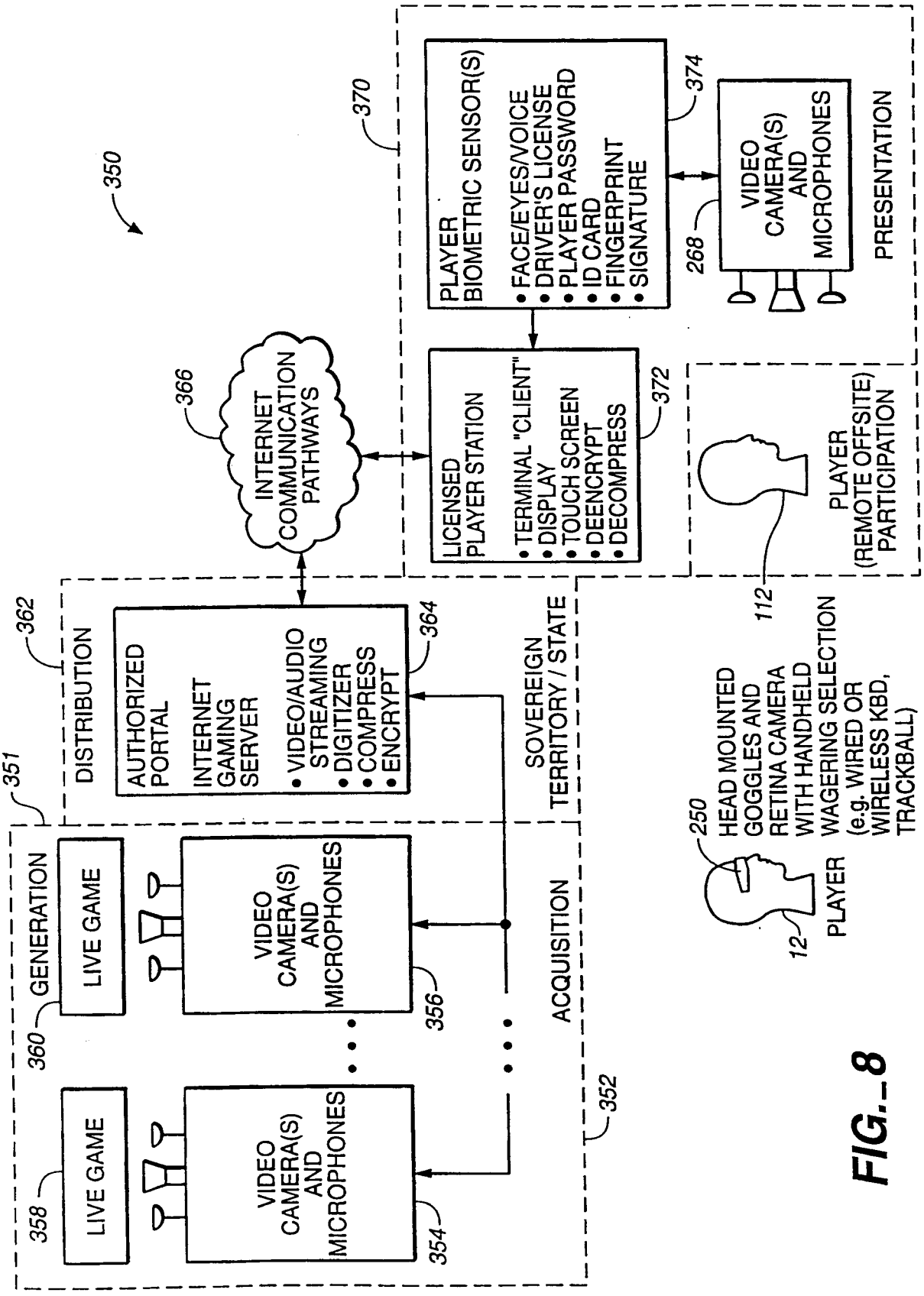

350
351
352
358
LIVE GAME
360
GENERATION
LIVE GAME
354
VIDEO CAMERA(S) AND MICROPHONES
356
VIDEO CAMERA(S) AND MICROPHONES
ACQUISITION
SOVEREIGN TERRITORY / STATE
362
DISTRIBUTION
AUTHORIZED PORTAL
INTERNET GAMING SERVER
• VIDEO/AUDIO STREAMING
• DIGITIZER
• COMPRESS
• ENCRYPT
364
366
INTERNET COMMUNICATION PATHWAYS
370
LICENSED PLAYER STATION
• TERMINAL "CLIENT"
• DISPLAY
• TOUCH SCREEN
• DEENCRYPT
• DECOMPRESS
372
PLAYER BIOMETRIC SENSOR(S)
• FACE/EYES/VOICE
• DRIVER'S LICENSE
• PLAYER PASSWORD
• ID CARD
• FINGERPRINT
• SIGNATURE
374
268
VIDEO CAMERA(S) AND MICROPHONES
PRESENTATION
PLAYER (REMOTE OFFSITE) PARTICIPATION
112
250
HEAD MOUNTED GOGGLES AND RETINA CAMERA WITH HANDHELD WAGERING SELECTION (e.g. WIRED OR WIRELESS KBD, TRACKBALL)
12
PLAYER

FIG._8

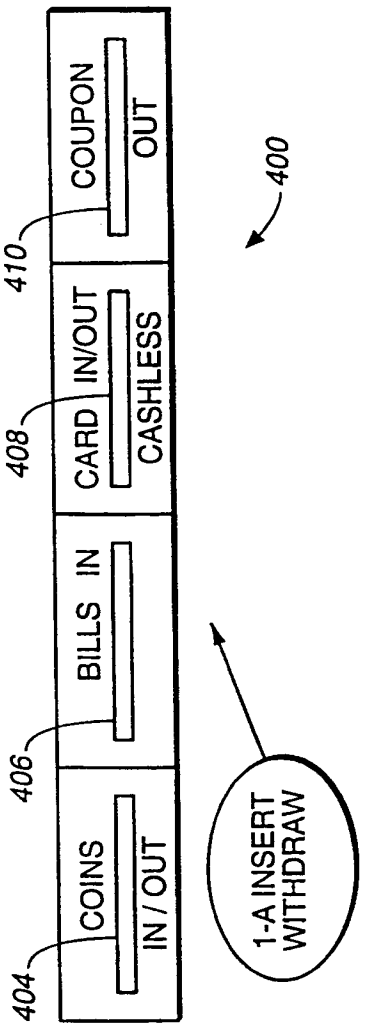

400
410
COUPON OUT
408
CARD IN/OUT CASHLESS
406
BILLS IN
404
COINS IN / OUT
1-A INSERT WITHDRAW

FIG._9

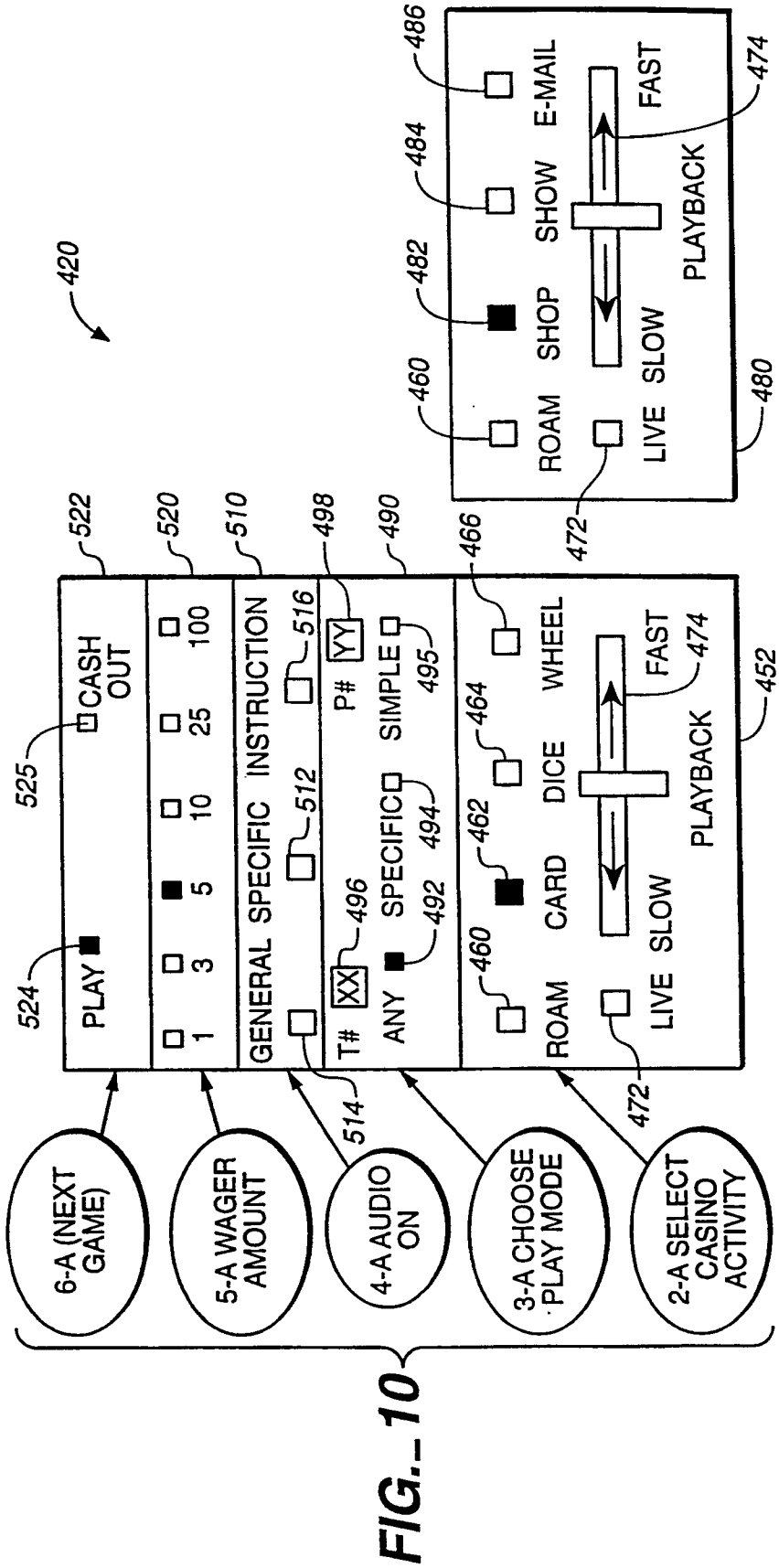

420
522
520
510
498
490
466
472
486
484
482
460
480
474
ROAM SHOP SHOW E-MAIL
LIVE SLOW FAST
PLAYBACK
CASH OUT
525
PLAY
524
1 3 5 10 25 100
GENERAL SPECIFIC INSTRUCTION
516
512
T# XX 496
ANY 492
SPECIFIC 494
P# YY
SIMPLE 495
514
ROAM CARD DICE WHEEL
460 462 464
LIVE SLOW FAST
PLAYBACK
452
6-A (NEXT GAME)
5-A WAGER AMOUNT
4-A AUDIO ON
3-A CHOOSE PLAY MODE
2-A SELECT CASINO ACTIVITY

FIG._10

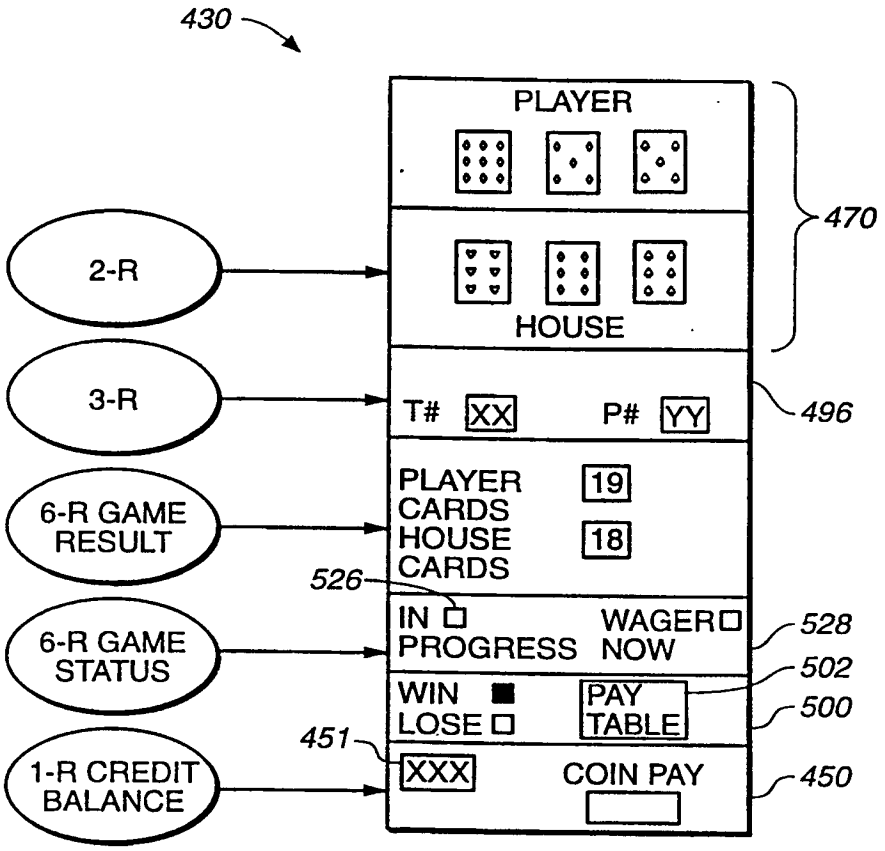

430
PLAYER
HOUSE
470
2-R
3-R
6-R GAME RESULT
6-R GAME STATUS
1-R CREDIT BALANCE
T# XX
P# YY
496
PLAYER CARDS 19
HOUSE CARDS 18
526
IN PROGRESS
WAGER NOW
528
WIN
LOSE
PAY TABLE
502
500
451
XXX
COIN PAY
450

FIG._11

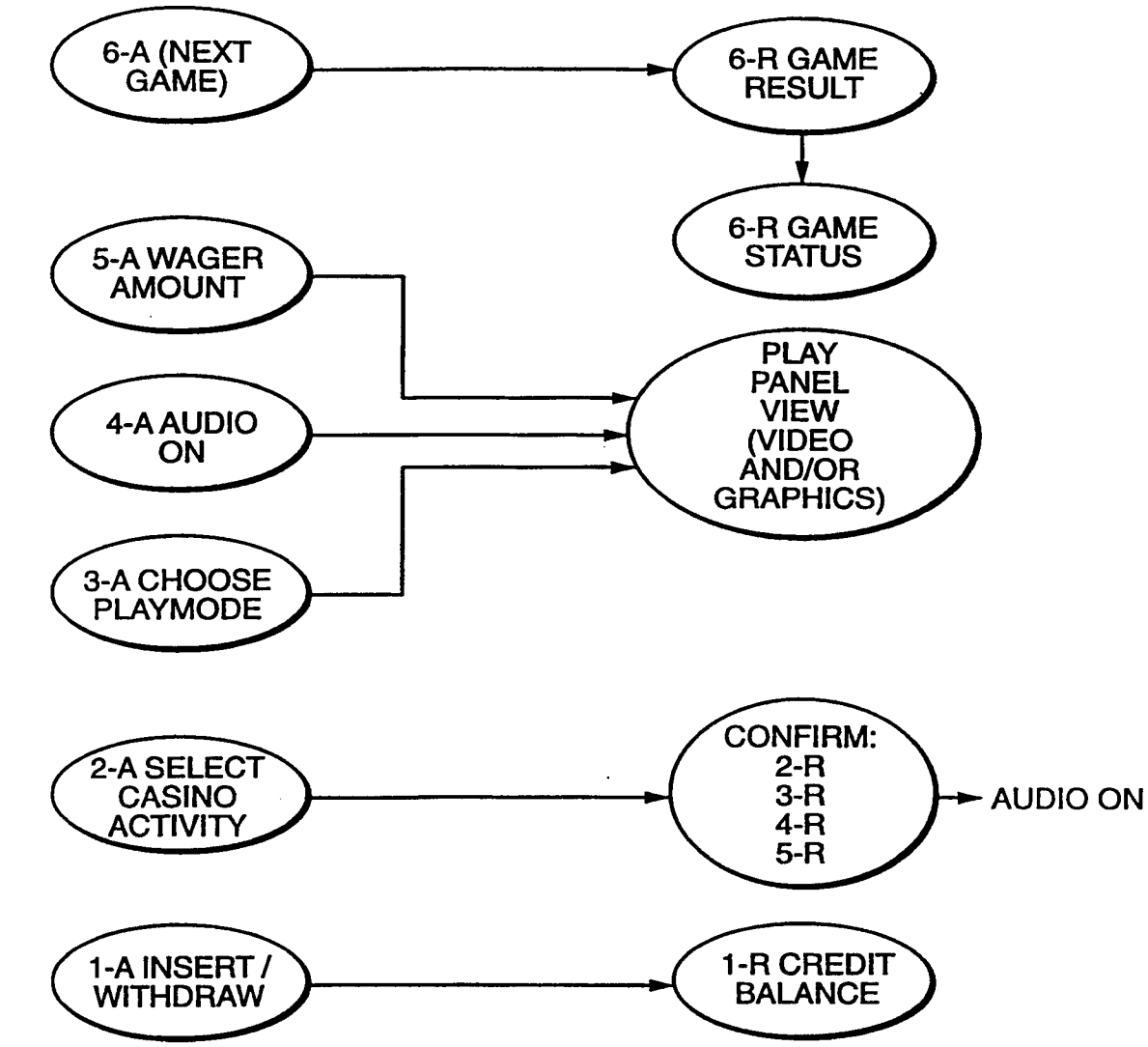

6-A (NEXT GAME)
6-R GAME RESULT
6-R GAME STATUS
5-A WAGER AMOUNT
4-A AUDIO ON
3-A CHOOSE PLAYMODE
PLAY PANEL VIEW (VIDEO AND/OR GRAPHICS)
2-A SELECT CASINO ACTIVITY
CONFIRM: 2-R 3-R 4-R 5-R
AUDIO ON
1-A INSERT / WITHDRAW
1-R CREDIT BALANCE

FIG._12

FIG._13

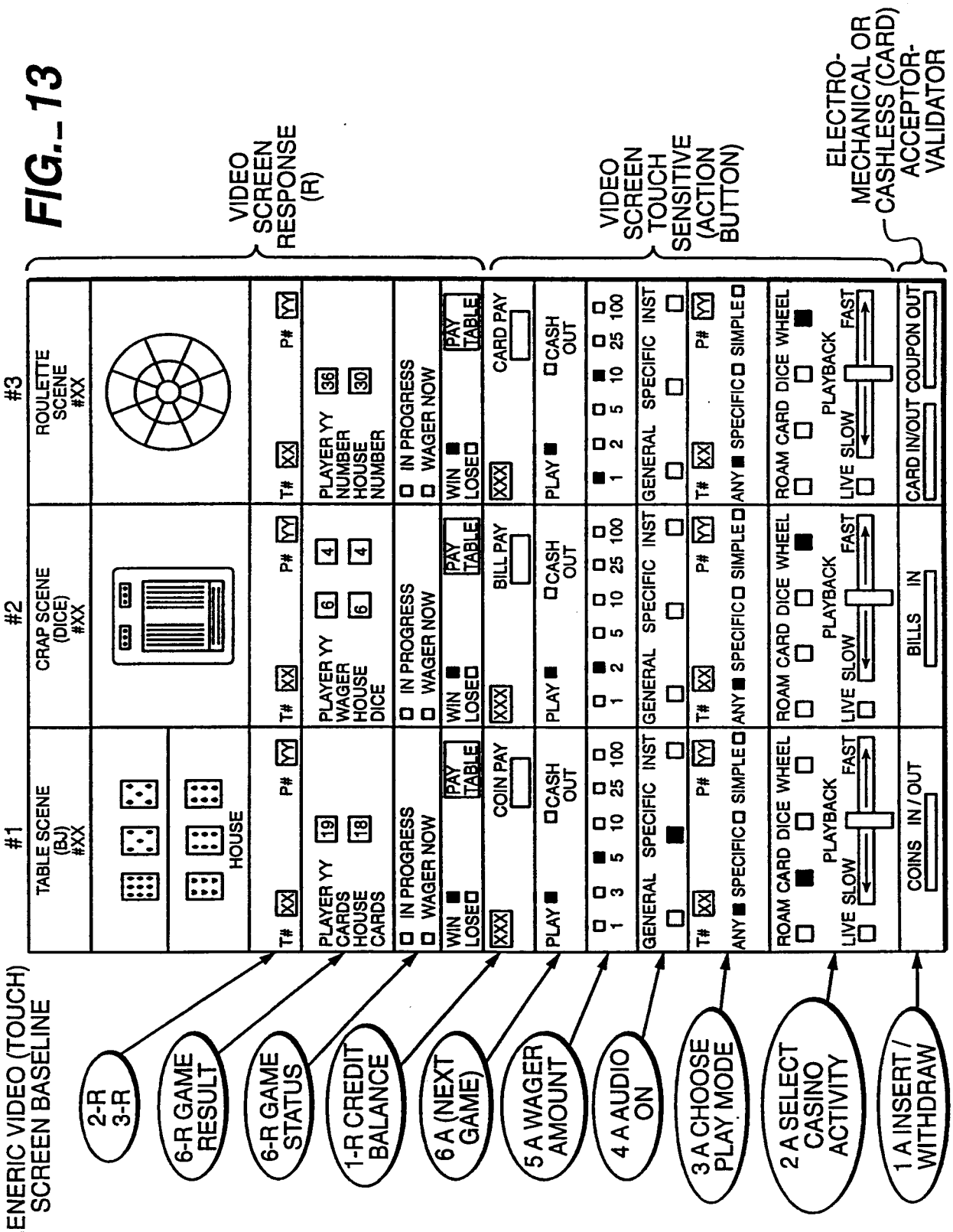
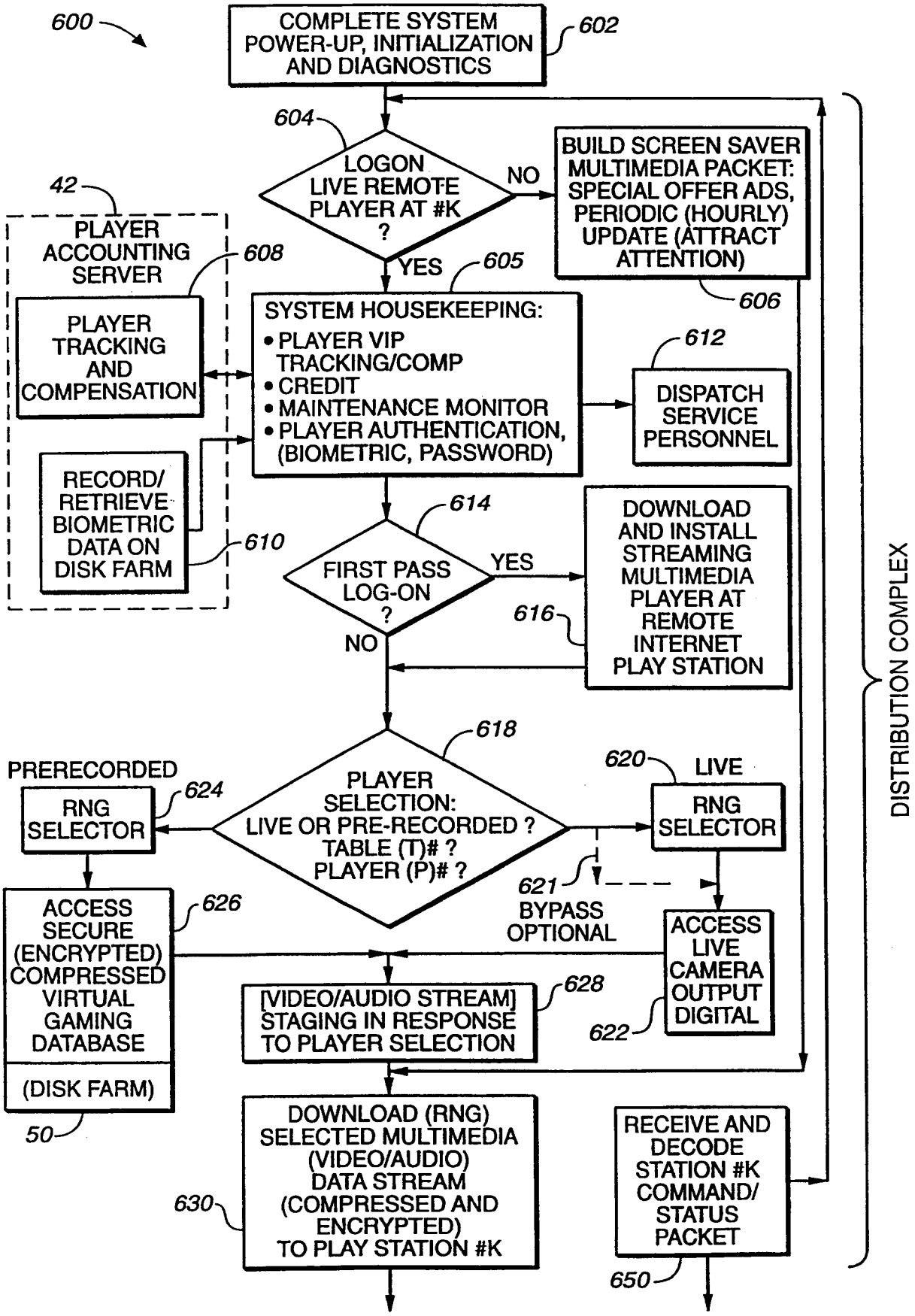

GENERIC VIDEO (TOUCH) SCREEN BASELINE
#1
#2
#3
TABLE SCENE (BJ) #XX
CRAP SCENE (DICE) #XX
ROULETTE SCENE #XX
HOUSE
T# XX P# YY
PLAYER YY CARDS 19
HOUSE CARDS 18
IN PROGRESS
WAGER NOW
WIN LOSE
PAY TABLE
XXX
COIN PAY
CASH OUT
PLAY
1 3 5 10 25 100
GENERAL SPECIFIC INST
ANY SPECIFIC SIMPLE
ROAM CARD DICE WHEEL
PLAYBACK
LIVE SLOW FAST
COINS IN / OUT
T# XX P# YY
PLAYER YY WAGER 6 4
HOUSE DICE 6 4
BILL PAY
BILLS IN
PLAYER YY NUMBER 36
HOUSE NUMBER 30
CARD PAY
1 2 5 10 25 100
CARD IN/OUT COUPON OUT
VIDEO SCREEN RESPONSE (R)
VIDEO SCREEN TOUCH SENSITIVE (ACTION BUTTON)
ELECTRO-MECHANICAL OR CASHLESS (CARD) ACCEPTOR-VALIDATOR
2-R 3-R
6-R GAME RESULT
6-R GAME STATUS
1-R CREDIT BALANCE
6 A (NEXT GAME)
5 A WAGER AMOUNT
4 A AUDIO ON
3 A CHOOSE PLAY MODE
2 A SELECT CASINO ACTIVITY
1 A INSERT / WITHDRAW

FIG._14A


600
COMPLETE SYSTEM POWER-UP, INITIALIZATION AND DIAGNOSTICS
602
604
LOGON LIVE REMOTE PLAYER AT #K ?
NO
BUILD SCREEN SAVER MULTIMEDIA PACKET: SPECIAL OFFER ADS, PERIODIC (HOURLY) UPDATE (ATTRACT ATTENTION)
606
YES
605
42
PLAYER ACCOUNTING SERVER
608
PLAYER TRACKING AND COMPENSATION
SYSTEM HOUSEKEEPING:
• PLAYER VIP TRACKING/COMP
• CREDIT
• MAINTENANCE MONITOR
• PLAYER AUTHENTICATION, (BIOMETRIC, PASSWORD)
612
DISPATCH SERVICE PERSONNEL
RECORD/ RETRIEVE BIOMETRIC DATA ON DISK FARM
610
614
FIRST PASS LOG-ON ?
YES
DOWNLOAD AND INSTALL STREAMING MULTIMEDIA PLAYER AT REMOTE INTERNET PLAY STATION
616
NO
618
PRERECORDED
624
RNG SELECTOR
PLAYER SELECTION: LIVE OR PRE-RECORDED ? TABLE (T)# ? PLAYER (P)# ?
620
LIVE
RNG SELECTOR
621
BYPASS OPTIONAL
ACCESS SECURE (ENCRYPTED) COMPRESSED VIRTUAL GAMING DATABASE
(DISK FARM)
50
626
ACCESS LIVE CAMERA OUTPUT DIGITAL
622
[VIDEO/AUDIO STREAM] STAGING IN RESPONSE TO PLAYER SELECTION
628
DOWNLOAD (RNG) SELECTED MULTIMEDIA (VIDEO/AUDIO) DATA STREAM (COMPRESSED AND ENCRYPTED) TO PLAY STATION #K
630
RECEIVE AND DECODE STATION #K COMMAND/ STATUS PACKET
650
DISTRIBUTION COMPLEX

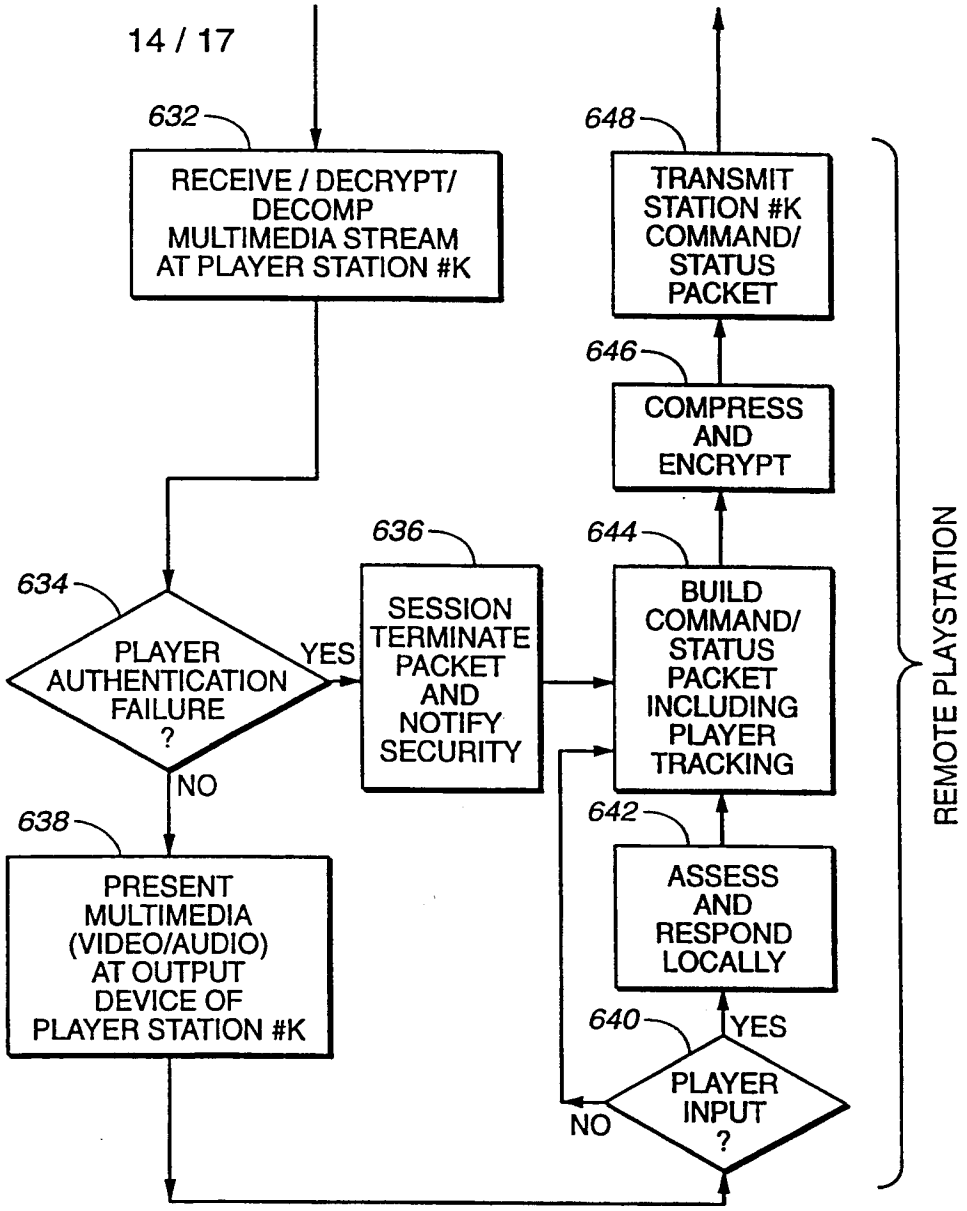


FIG._14B

FIG._14A

FIG._14B

FIG._14

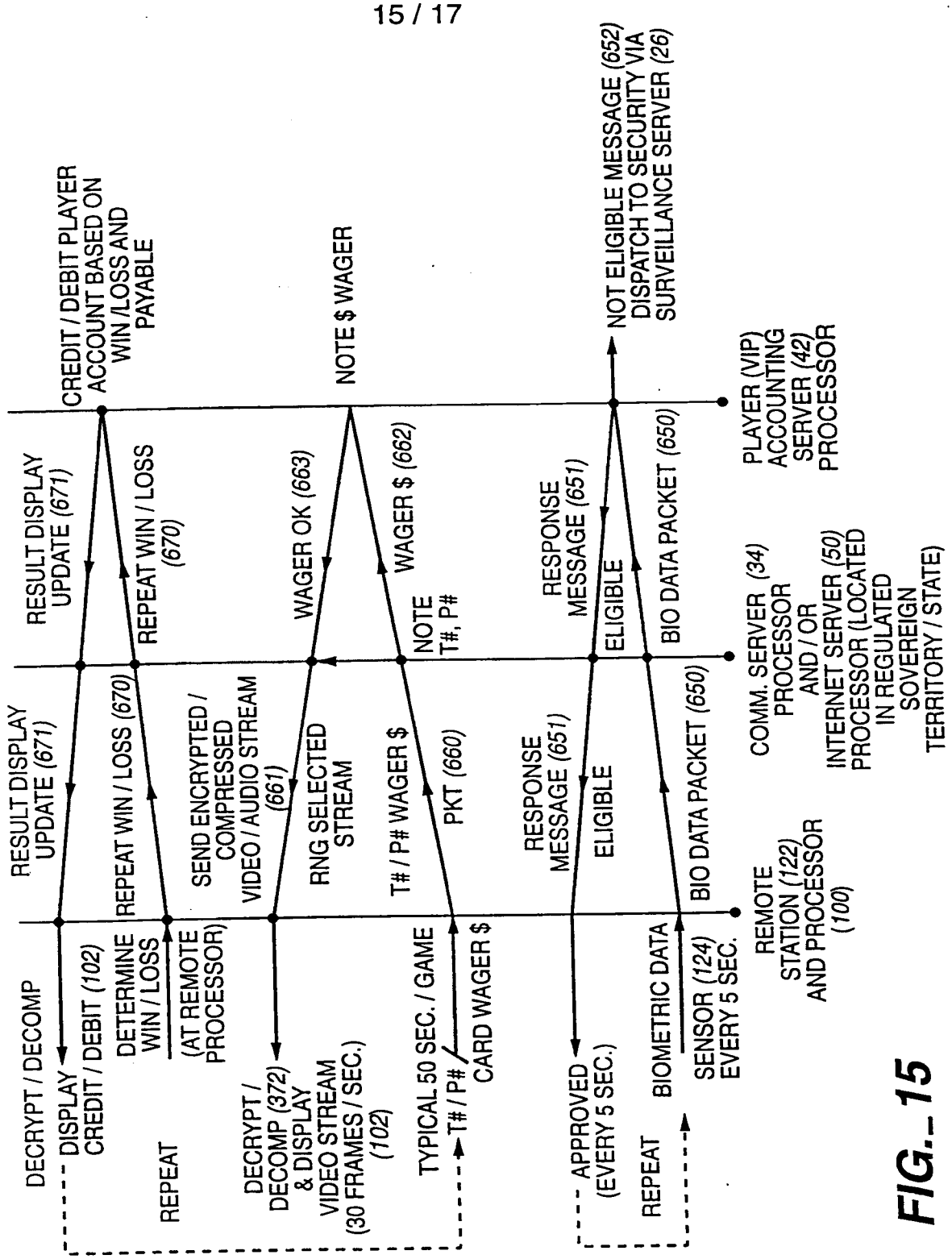

DECRYPT / DECOMP
DISPLAY CREDIT / DEBIT (102)
DETERMINE WIN / LOSS
(AT REMOTE PROCESSOR)
REPEAT
DECRYPT / DECOMP (372) & DISPLAY VIDEO STREAM (30 FRAMES / SEC.) (102)
TYPICAL 50 SEC. / GAME
T# / P#
CARD WAGER $
APPROVED (EVERY 5 SEC.)
REPEAT
BIOMETRIC DATA
SENSOR (124) EVERY 5 SEC.
REMOTE STATION (122) AND PROCESSOR (100)
RESULT DISPLAY UPDATE (671)
REPEAT WIN / LOSS (670)
SEND ENCRYPTED / COMPRESSED VIDEO / AUDIO STREAM (661)
RNG SELECTED STREAM
T# / P# WAGER $
PKT (660)
RESPONSE MESSAGE (651)
ELIGIBLE
BIO DATA PACKET (650)
COMM. SERVER (34) PROCESSOR AND / OR INTERNET SERVER (50) PROCESSOR (LOCATED IN REGULATED SOVEREIGN TERRITORY / STATE)
RESULT DISPLAY UPDATE (671)
REPEAT WIN / LOSS (670)
WAGER OK (663)
NOTE T#, P#
WAGER $ (662)
RESPONSE MESSAGE (651)
ELIGIBLE
BIO DATA PACKET (650)
PLAYER (VIP) ACCOUNTING SERVER (42) PROCESSOR
CREDIT / DEBIT PLAYER ACCOUNT BASED ON WIN /LOSS AND PAYABLE
NOTE $ WAGER
NOT ELIGIBLE MESSAGE (652) DISPATCH TO SECURITY VIA SURVEILLANCE SERVER (26)

FIG._15

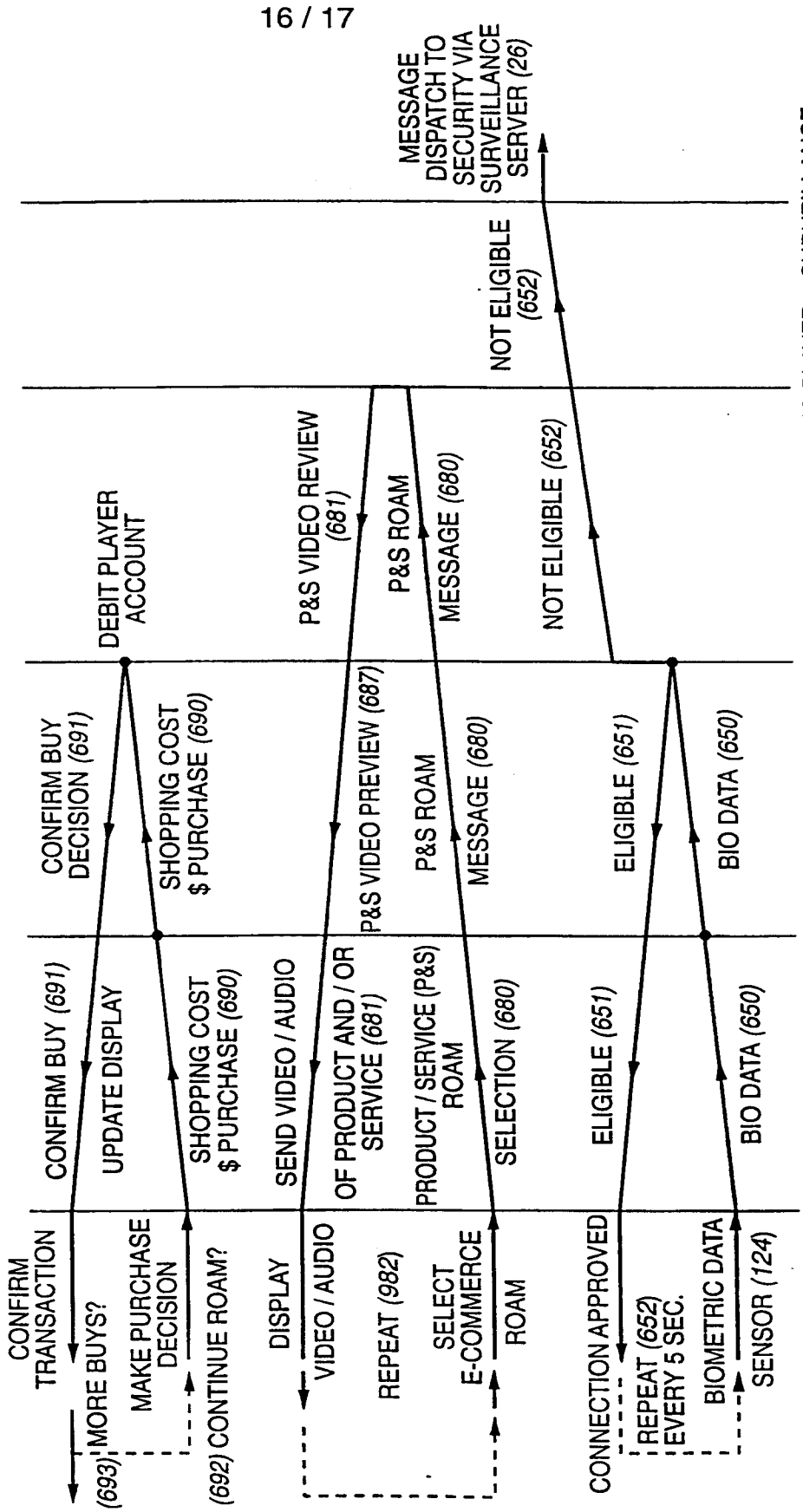
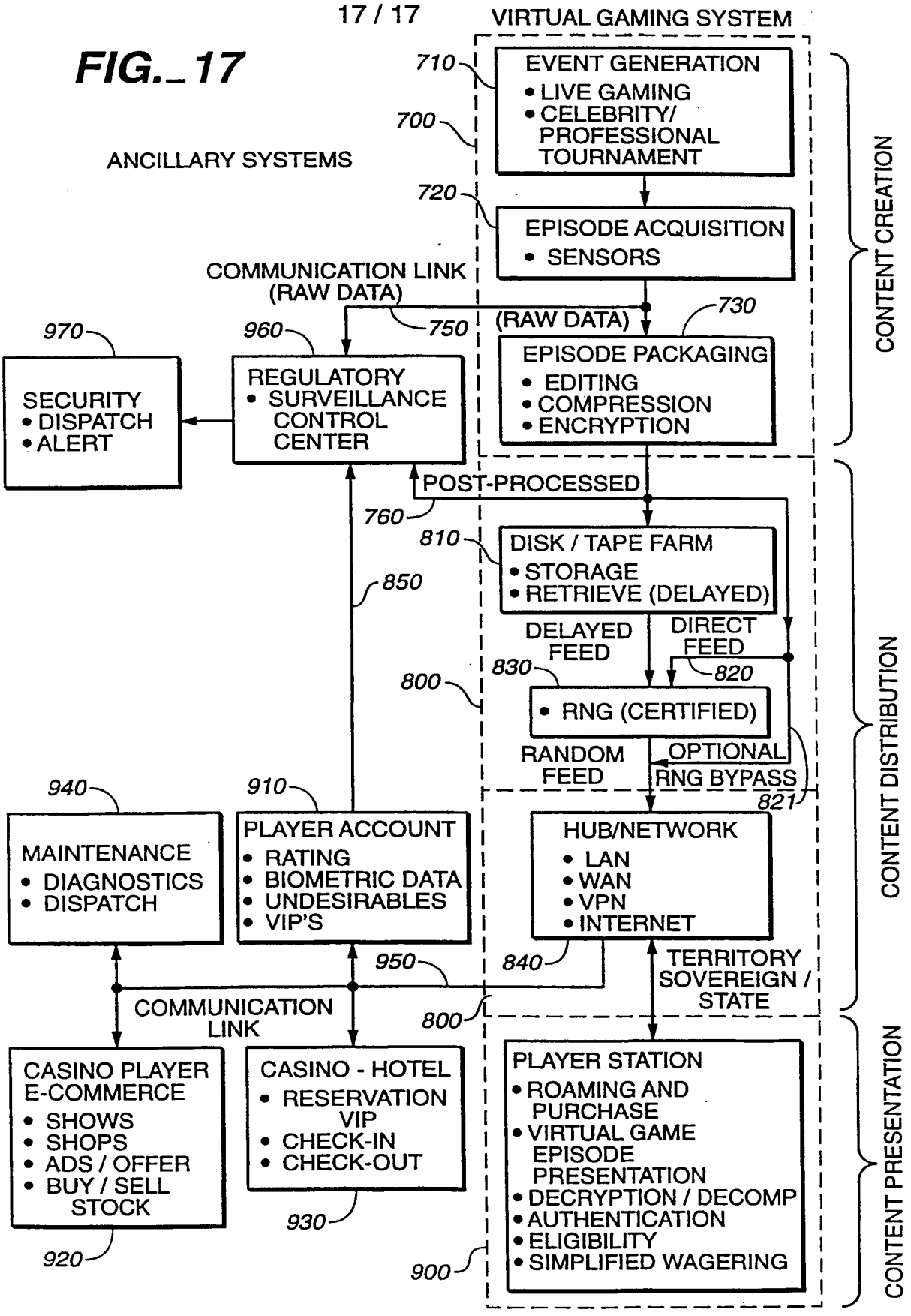

CONFIRM TRANSACTION
MORE BUYS? (693)
MAKE PURCHASE DECISION
CONTINUE ROAM? (692)
DISPLAY
VIDEO / AUDIO
REPEAT (982)
SELECT E-COMMERCE
ROAM
CONNECTION APPROVED
REPEAT (652) EVERY 5 SEC.
BIOMETRIC DATA
SENSOR (124)
PLAYER STATION I / O
REMOTE STATION (122) AND PROCESSOR (100)
CONFIRM BUY (691)
UPDATE DISPLAY
SHOPPING COST $ PURCHASE (690)
SEND VIDEO / AUDIO
OF PRODUCT AND / OR SERVICE (681)
PRODUCT / SERVICE (P&S) ROAM
SELECTION (680)
ELIGIBLE (651)
BIO DATA (650)
COMM. SERVER PROCESSOR (34) AND / OR INTERNET SERVER (50) PROCESSOR (LOCATED IN REGULATED SOVEREIGN TERRITORY / STATE)
CONFIRM BUY DECISION (691)
SHOPPING COST $ PURCHASE (690)
P&S VIDEO PREVIEW (687)
P&S ROAM MESSAGE (680)
ELIGIBLE (651)
BIO DATA (650)
DEBIT PLAYER ACCOUNT
PLAYER ACCOUNTING (VIP) SERVER (42) PROCESSOR INCLUDING VIP DOWNLOAD FROM HOTEL RESERVATION SERVER (41)
P&S VIDEO REVIEW (681)
P&S ROAM MESSAGE (680)
NOT ELIGIBLE (652)
CASINO PLAYER E-COMMERCE (P&S) SERVER PROCESSOR (38)
NOT ELIGIBLE (652)
MESSAGE DISPATCH TO SECURITY VIA SURVEILLANCE SERVER (26)
SURVEILLANCE SERVER (26)

FIG._16

FIG._17


VIRTUAL GAMING SYSTEM
ANCILLARY SYSTEMS
710
EVENT GENERATION
• LIVE GAMING
• CELEBRITY/ PROFESSIONAL TOURNAMENT
700
720
EPISODE ACQUISITION
• SENSORS
COMMUNICATION LINK (RAW DATA)
750
(RAW DATA)
730
EPISODE PACKAGING
• EDITING
• COMPRESSION
• ENCRYPTION
970
960
SECURITY
• DISPATCH
• ALERT
REGULATORY
• SURVEILLANCE CONTROL CENTER
CONTENT CREATION
POST-PROCESSED
760
810
DISK / TAPE FARM
• STORAGE
• RETRIEVE (DELAYED)
850
DELAYED FEED
DIRECT FEED
820
830
800
• RNG (CERTIFIED)
RANDOM FEED
OPTIONAL RNG BYPASS
821
940
910
MAINTENANCE
• DIAGNOSTICS
• DISPATCH
PLAYER ACCOUNT
• RATING
• BIOMETRIC DATA
• UNDESIRABLES
• VIP'S
HUB/NETWORK
• LAN
• WAN
• VPN
• INTERNET
CONTENT DISTRIBUTION
950
840
TERRITORY SOVEREIGN / STATE
COMMUNICATION LINK
800
CASINO PLAYER E-COMMERCE
• SHOWS
• SHOPS
• ADS / OFFER
• BUY / SELL STOCK
CASINO - HOTEL
• RESERVATION VIP
• CHECK-IN
• CHECK-OUT
PLAYER STATION
• ROAMING AND PURCHASE
• VIRTUAL GAME EPISODE PRESENTATION
• DECRYPTION / DECOMP
• AUTHENTICATION
• ELIGIBILITY
• SIMPLIFIED WAGERING
CONTENT PRESENTATION
930
920
900